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AUTHOR Jones, James A.; And Others
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ABSTRACT

This study examined cognitive and affective development among children in ten preschool (Head Start) programs in the Boston area that varied in socioeconomic class, racial composition, and cultural emphasis. Data, collected over a two-year period, were compared in an effort to ascertain the effects of socioeconomic status and racism on the children. In three of the schools a self concept training corponent was introduced. The main focus of this component was to test selected training techniques and materials with parents, teachers and social workers for effectiveness in building self esteem among black children. The Boehm Test of Basic Concepts, the Scamin Self Concept and Motivation Inventory, and a school observation form were used to measure cognitive and self esteem. Results indicated that: (1) racial mixing appeared to have negative consequences for cognitive development among black and white preschool children when the school's cultural emphasis was white, but not when the emphasis was black; (2) middle class children in racially mixed groupings showed superior mastery of conceptual knowledge in schools whose cultural emphasis was white, but not in those whose emphasis was black; and (3) the self concept training component appeared to be successful. A copy of the school observation questionnaire is included among the appendices. (ED)

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BLACK ANALYSIS INC.

LEARNING AND SELF-ESTEEM AMONG BLACK AND WHITE PRE-SCHOOLERS

James A. Jones, Ph.D.
Research Director

A. Lenora Taitt, Ed.D.
Research Associate

Kenneth Washington, Ph.D.
Training Director

T. George Silcott, M.S.W.
Project Director

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RD# 3 • PINES BRIDGE ROAD • MOUNT KISCO • NEW YORK 10549 • (914) 241-2943
SUITE MD • 549 WEST 123RD STREET • NEW YORK, NEW YORK 10027 • (212) 850-0104

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FOREWORD

The report that follows is important not only because of the subject but because of the total process in which the project was involved. We believe researchers have to deal with the concerns of those who are participants in and subjects of research programs. Their fears, their feelings that they are being used (exploited), and their desire to have direct "feedback" on the data collected and knowledge gained must be addressed by researchers.

In this project, we attempted to be responsive to these issues. Consequently, the administration of this research effort may be seen as being a little different from that of similar studies that have been conducted.

The following procedures that were a part of this study are somewhat atypical to general research efforts:

-- The selection of the schools for this study involved the funding agency, members of the community in which the schools were located, and the key persons of the schools themselves.

-- Meetings were held with board members, teachers, parents, and administrators in order to interpret the project and gain their approval and permission to conduct the testing at their school.

Some approved but did not permit their school to be involved.

-- Our agreement with the schools required us to meet with the staffs after data was compiled to share information with them that was gleaned from the data.

-- A meeting of all the participant schools was held in order to permit them to react to a draft report of the study.

-- A diversified group of consultants including researchers and educators wrote critical reviews of the draft report and met to discuss the study.

-- A conference was held at which a summarized report of the study was presented and discussed. The participants in the conference included representative pre-school personnel from the six New England states. Directors of the schools that were involved in the study also participated in the conference.

The report that follows reflects what transpired in the process of conducting this study, including the procedures identified above.

This report is organized into two sections, each representative of the project's two major thrusts: research and training. Both, however, were integrated and coordinated so as to provide the maximum information possible about cognitive learning and self-esteem of head start pupils who were exposed to educational settings with different cultural emphases and socio-economic status.

The basic design of the study required studying cognitive and affective development among students in ten pre-school programs that varied in socio-economic class, racial composition, and cultural emphasis. Ten schools from the Boston area were selected as participants. Over a 2-year period, data on the cognitive development and self-esteem of students in these different kinds of pre-school programs were compared in an effort to ascertain the effects of socio-economic status and racism on the children. In addition, in three of the schools where the research was being conducted, a Self-Concept Training Component was introduced whose essential focus was to test selected training techniques and materials for their effectiveness in building self-esteem among Black children who participate in pre-school programs. This component sought, too, to train parents, teachers, social workers, and other staff in techniques to develop self-esteem in children.

Some interesting and unexpected results were obtained. The study showed, for example, that racial mixing appears to have negative consequences for cognitive development among Black and White students of pre-school age when the cultural emphasis of the schools is White. No such negative consequences occurred among a mixed student group, however, when the school's cultural emphasis was Black.

This finding strongly suggests that the effects of racial mixing in the classroom cannot be assessed independent of the context within which the mixing occurs. It may well be that the racism that seems to be endemic to the typical school has negative consequences for cognitive development.

In comparing the effect of class differences on cognitive development, the study found that middle-class students in racially mixed groupings showed superior mastery of conceptual knowledge only in schools whose cultural emphasis was White. No such class differences in conceptual development were perceived among racially mixed students in schools with a Black cultural emphasis. This finding seemed to be related to the long-held belief that the style and content of most schools caters to the cultural outlook of the White middle class.

In the Self-Concept Training Component, the most noteworthy finding was that pre-schoolers exposed to the program perceived their teachers as having higher perceptions of them than did those pre-schoolers who had no exposure to the program. The clear inference, from the data amassed in this study, is that when teachers highlight children's accomplishments, the children perceive that the teacher thinks well of them and, on the basis of this perception, begin to think well of themselves.

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We would also like to express our appreciation to Ron Edmunds, Director of the Urban Center of the Harvard University School of Education who granted us permission to use the Center as a meeting place and home base for our data collection activities. We owe and here acknowledge a special debt of gratitude to our testers: Debra Aquillard, Earl Avery, Adetokenboh Bankole-Wright, Fernando Centeno, Allison Cook, Frank Enwonwu, Tony Fitchue, Sarah Foley,

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Our heartfelt thanks are expressed to Mrs. Rheable Edwards and Mrs. Tina Burrell of the Office of Human Development (OCD) for their valuable assistance and counselling during the three years of this study.

Without the gracious cooperation of the participating schools, this study would not have been possible. We appreciate their willingness to expose their programs, staff, and children to this study. We know that participation was not easy and involved some risk. However, the expansion of our knowledge base depends upon this kind of research which, in turn, requires the cooperation of service programs.

The participating schools were:

Lena Park Day Care
Children's World Day Care Center
Crispus Attucks Day Care
Charlestown Head Start Program
Harvard Yard Child Care Center
Rosa Parks Day Care Center
Carol's Nursery School and Kindergarten
South End Neighborhood Action Program
Massachusetts Experimental School System
Allson Brighton Day Care Center
William M. Trotter Elementary School

OVERVIEW

The research reported here sought to discover what happens to the cognitive learning and self-esteem of Black and White Head Start pupils of differing socio-economic groups when they are exposed to educational settings with varying racial compositions and contrasting cultural emphases. Specifically, the research examined the following four hypotheses:

1) The cognitive development of pupils of middle-class status will exceed that of pupils of lower-class status, regardless of race, in a school setting whose cultural emphasis is White, but not in a school setting whose cultural emphasis is Black.

2) Racial mixing in the school enhances cognitive development, regardless of the school's cultural emphasis.

3) A school whose cultural assumptions match the cultural heritage of its pupils enhances the self-esteem of those pupils.

4) A school whose cultural assumptions do not match the cultural heritage of its pupils is less damaging to the self-esteem of Black pupils than to that of White pupils.

In addition, a Self-Concept Training Component was introduced in 1974 and 1975 in three of the schools where the research was being conducted.

The essential focus of this training component was to test training approaches, techniques, and materials for their effectiveness in building self-esteem among Black children who participate in pre-school programs.

This component sought, too, to train parents, teachers, social workers, and other staff in techniques to develop self-esteem in children.

The basic design of the study required selecting and gaining the cooperation of ten schools that varied in socio-economic class, racial composition, and cultural emphasis. The requisite schools were obtained, except for a middle-income school with a Black cultural emphasis. All schools with a Black cultural emphasis seemed to have a low-income student body.

Our hypotheses relate school climate to cognitive development and self-esteem. Accordingly, we needed two instruments with which to measure cognition and self-esteem in pre-school children.

After an extensive search, two data collection instruments were identified which seemed to fit our needs. One was the Boehm Test of Basic Concepts. The other was the Scamin Self-Concept and Motivation Inventory.

Hypothesis#1: The first hypothesis, that middle-class status enhances cognitive development in a school setting whose cultural emphasis is White, but not in one whose cultural emphasis is Black, required a comparison of lower and middle-class schools which differed in cultural emphasis.

Although we have complete data for only two middle-class schools, one of these schools has a White cultural emphasis and the other has a Black cultural emphasis. When conceptual growth for the students in these schools is compared to that of their lower-class counterparts, the results are supportive of this hypothesis. There is a statistically significant difference in conceptual growth between students in middle- and lower-class schools when the cultural emphasis is White, but no such difference between socio-economic classes when the cultural emphasis is Black.

Due to the limited comparisons we can make, the hypothesis cannot be said to have been confirmed. But, these results point to its validity.

Hypothesis#2: The second hypothesis is that racial mixing enhances cognitive development. Thus, students in schools whose racial composition is predominately Black or White should show less conceptual growth than those in schools whose racial composition is mixed. The results are fascinating, and also puzzling.

When the cultural emphasis of the schools is Black, the hypothesis is not supported. But when the cultural emphasis of the school is White, the hypothesis is reversed; that is, racial mixing appears to retard cognitive development. A detailed analysis makes it clear that the results are not the consequence of a lucky aggregation of numbers, nor due to an outstandingly superior performance on the part of one school.

Neither of the hypotheses about the impact of school climate upon self-esteem were supported by the data collected. However, these data were deficient in both quality and quantity. In our training component, we were able to use a much more valid measure of self-esteem among pre-school pupils.

One study cannot, by itself, produce incontrovertible evidence for or against a point of view. This is particularly so when, as was true in this study, the available data are insufficient for a full and detailed exploration of the subject. Our commentary, therefore, carries with it a request for further research along the lines that have opened up in this study.

One standard finding from this study was the relationship between social class and conceptual knowledge. The higher the social class composition of a school, the greater the mastery of concepts, both at the beginning and the end of school, on the part of the pupils in that school. We discovered, however, that this superiority of middle-class pupils existed only in those schools with a White cultural emphasis. There were no class differences in pupils' understanding of basic concepts in schools with a Black cultural emphasis.

We do not know why this is so. But for a long time educators and critics of educational methodology have felt that the style and content of most schools catered to the cultural outlook of the White middle class. Indeed, this feeling was the major impetus behind the drive to create schools whose teaching was not oriented towards this group. On the basis of the evidence that could be amassed in this study, those schools that have made this attempt are, at least, beginning to succeed in their efforts.

Most intriguing among our findings was the reversal in the impact of racial composition upon cognitive development between schools with a Black cultural emphasis and those with a White one. This finding strongly suggests that the effects of racial mixing in the classroom cannot be assessed independent of the context within which the mixing occurs. When racial mixing occurs in standard White cultural emphasis schools, the consequences seem to be negative for cognitive development. But when racial mixing occurs under different conditions (in this study, schools with a Black cultural emphasis), negative consequences do not occur. It may well be that the racism that seems to be endemic to the typical school has negative consequences for cognitive development.

The major focus of the self-concept training component was to help young Black children develop a positive sense of self. Teachers, parents, social workers, and other day care personnel were trained in techniques that can be used to develop self-esteem in children. More specifically, the self-concept training program (treatment) involved:

1. Systematic use of positive reinforcement by teachers (weekly conferences accenting successes, identification of strengths, and mutual goal setting).

2. Systematic parental attention and positive reinforcement of child's work (Parent/Child Homework Form).

3. Systematic dissemination of information about self to the child on a daily basis (10- to 20-minute small group informational and activity sessions each morning).

We set forth the following hypotheses:

1. Self-perception mean scores of pre-school children exposed to the intervention program will be higher than the self-perception mean scores of those who were not exposed.

2. Self-perception mean scores of female pre-schoolers exposed to the treatment will be higher than the self-perception mean scores of male pre-schoolers who were exposed.

3. Perceived teacher-perception (child's view) mean scores will be higher for pre-school children exposed to the intervention program than the perceived teacher-perception mean scores of those who were not exposed.

4. Perceived teacher-perception (child's view) mean scores of female pre-schoolers exposed to the treatment will be higher than the perceived teacher-perception mean scores of male pre-schoolers who were exposed.

The instrument employed in the assessment of self-concept changes was the Brown - IDS Self-Concept Referent Test which is an individually-administered test composed of eleven bipolar adjectival items written in the vocabulary of young pre-school children (e.g., nice-bad; happy-sad).

After the initial orientation and training sessions, the intervention program commenced with the full cooperation of teachers and parents. Classes within the day care center were randomly assigned to experimental and control groups. Subjects in the 1974 experimental group were exposed to the treatment for approximately five months. Throughout this period, teachers were expected to hold weekly conferences with each child. During these conferences, the child's accomplishments were highlighted and mutually agreed -upon goals were set for each child. In addition to the teacher/child conferences, self-awareness sessions were held every morning for about twenty minutes. These sessions were designed to provide children with positive information about themselves, their families, and important school and community people.

Parents were expected to reinforce teachers' classroom efforts by spending a few minutes each week having discussions with their child about the goal towards which he or she was working, and about in-school success activity. All of the treatment learning experiences concentrated on helping the child establish a success-oriented pattern of learning. Thirty-six of the children assigned to the experimental group and 16 of the children assigned to the control group were selected to be tested in 1974.

The procedure for 1975 was the same as for 1974, except that the experimental group was composed of two self-contained classes with a combined total of approximately 28 children, while one self-contained class of fourteen students was selected as the control group. Also, subjects in the experimental group were exposed to the treatment for approximately two months, instead of five.

In 1974, with respect to the first hypothesis, it was clear that the intervention program did have a significant impact on the self-perception of pre-schoolers who were exposed to the program.

In hypothesis two, the researcher had predicted that the treatment would have a greater influence on the self-concept mean scores of female pre-schoolers than it would on the self-concept mean scores of male pre-schoolers. However, the treatment had more of an impact on males than it did on females. The data suggest that perhaps the females entered the program with more positive self-concepts than those of the males. This finding was not expected.

With respect to the third hypothesis, the finding revealed that pre-schoolers exposed to the program perceived their teachers as having higher perceptions of them than did those pre-schoolers who had no exposure to the program. Again, it is important to note that, as in the self-perception data, highly perceived teacher-perception was found to have occurred most among the males. As a result, hypothesis four which maintained that the treatment would cause the perceived teacher-perception

mean scores of female pre-schoolers to be higher than those of male pre-schoolers could not be accepted.

While there are obvious limitations in attempting to generalize about the results of this pilot study in other settings, one can strongly infer from the findings that treatment did have a positive impact on self-esteem.

The 1975 results differ from those of 1974 only in that the first hypothesis was not confirmed in the second year as it had been in the first. This may be directly attributable to the shorter exposure of the pupils to the treatment (two months compared to five months) during the second year. We may infer from the data that when teachers highlight children's accomplishments, the children perceive that the teacher thinks well of them and, on the basis of this perception, begin to think well of themselves.

The overall results suggest that the self-concept development approach used in this pilot program is of value and can be utilized in other day care institutions.

* * * * *

I. INTRODUCTION

Prior to the 1954 United States Supreme Court decision to Brown vs. "Topeka Board of Education," the United States publicly acknowledged the existence of two separate and unequal school systems. The South had legalized racial segregation in the schools, while the residential boundaries of Northern cities made de facto school segregation a way of life. The Supreme Court decision has made a significant impact not only on the lives of those who were directly affected by it but on the quantity and quality of social science research which has proliferated as a result of it.

It must first of all be noted that the vast majority of the psychological, sociological, and educational literature available on heterogeneity in the classroom has focused on two major issues: the effects of desegregation on academic performance and achievement and the effects of desegregation on the psychological well-being of children involved. Although this literature has addressed the consequences of desegregation on children of school age rather than on pre-school children, the research material seems pertinent, as well, to matters concerning the development of the pre-school child. For one thing, the intelligence levels and cognitive skills of early childhood appear to have a high correlation with academic achievement during the school years and early adulthood. Furthermore, clinicians believe that the psychological coping processes are set at a very early age. Thus, the reactions to racial mixing which can be observed for grade school and high school pupils are more likely than not to pertain to the pre-school child as well.

This introduction will summarize some of the pertinent research studies and findings on the academic and psychological effects of desegregation. We will conclude the review by noting a major methodological flaw in nearly all of the research done to date.

Effects of Desegregation on Academic Performance of Black and White Children

The published data indicate favorable academic adjustment for both White and Black students in desegregated school settings (Coles, 1968, Crocket, 1957, Little, 1971, Southern School News, 1960, Stallings, 1959, and Coles, 1967). Stallings (1959) has reported on the results of achievement testing in the Louisville elementary schools for 1955-56, the year prior to total elimination of legal segregation, and again two years later. Despite the fact that Black/White pupil ratios per class varied widely, gains were found in the median scores of all pupils for the grades tested, with the Black pupils showing greater overall improvement than the White. Similarly, the U.S. Commission on Civil Rights found

"some evidence that the scholastic achievements of Negroes in such [integrated] schools has improved, and no evidence of a resultant reduction in the achievement of White students" (Southern School News, 1960). In Washington, D.C., when comparisons were made of the achievement levels of pupils in Grades 3, 5, 6, 8, and 9 before and after school integration, it was found that integration had not "retarded the advancement of high ability students, Negroes or Whites" (Hanson, 1960). In a similar study (Berkley, 1963) in Berkley, California, two matched groups of superior White students were compared, one of which had gone to an all-White junior high, the other, to a school with a large Black population. No differences were found between the two groups in achievement levels.

Another study, however, reported a slower rate of achievement for Blacks under desegregation. Day (1962), reporting on the experience of two years of desegregation in North Carolina, stated that a large proportion of Black children attending integrated schools had failed to keep pace with their White classmates.

More relevant for our focus upon pre-school pupils is a rather comprehensive and well-designed study by Denmark (1969). The study investigated several measures of cognitive development, under integrated and segregated conditions, with the SES (socio-economic status) of the children tested statistically controlled. The results indicated that regardless of the type and/or quality of the enrichment programs, none was able to raise the cognitive development of the lower-class Black child.

Psychological Effects of Desegregation on Black and White Children

While school administrators were interested in desegregation primarily because of its hoped-for positive effect on academic performance, the concerns of parents, children, and sensitive onlookers focused on its psychological consequences.

Katz (1964), in describing conditions of desegregation that could have detrimental effects on the psyche and performance of Blacks, wrote of the social rejection and isolation experienced by those Blacks who were the first to integrate their schools. Several studies (Bronfenbrenner, 1967, Dunn, 1970 and Katz, 1964) indicated that because of the inferior quality of the previous training of Blacks in segregated institutions, Black students would have a fear of competition with Whites which could lead them to decompensate, to be overly sensitive to instruction by White teachers, to evidence excessive demands for attention and approval, or to develop an even greater depth of inferiority feelings.

Other researchers have shown that, in schools with equally balanced White-Black ratios, there was little or no attitude change (E. Campbell, 1958). Studies from the 1960's showed similarly that, despite integration, Black high school students did not increase their educational or vocational aspirations (St. John, 1966) nor their apathy towards school (Williams, et al, 1969). Still other findings (Beker, 1967; Williams and Coles, in press) suggested that the educational morale of Black students may actually be decreased with desegregation.

Most studies indicate, however, that integration does not have deleterious effects on children of either race, particularly in the primary grades. The time dimension appears to be a critical factor in enabling students of different races to make a successful social adjustment to one another. The studies of Campbell, et al, (1958 a and b) utilizing a bi-racial research staff in an integrated camp setting found that, after a brief period, psychological adjustment for both Black and White children becomes favorable. Similarly, Dunn (1970) found that after a brief period children's and teachers' attitudes toward the opposite race improved. In the Dunn study, improved attitudes were a function not only of the time span but of the direction, attention, and guidance of the teacher. Pettigrew (1957) reported the emergence of decidedly different feelings towards members of the opposite race, generally, as the White students began to "accept" individual Blacks. Coles (1968) reports a similar phenomenon among White elementary school pupils.

On balance, most of the research seems to indicate that desegregation causes negligible psychological impairment to those involved.

Analysis and Critique of the Reported Studies

The questionable quality of the vast majority of the research literature surveyed in the report demonstrates the immense difficulty of doing research on a sociological phenomenon of such magnitude as desegregation. Almost without exception, the studies suffer from one or more of the following inadequacies: undocumented assumptions about minority group members (e.g. the poor quality of predominantly Black schools); biased population sampling; discrepant or inconsistent definitions of the independent and dependent variables examined; confounding of variables; questionable observational techniques; and the poorest type of research method -- the ex post facto design. Two shortcomings are particularly acute:

First, the studies contain an inherent bias in sampling. This biased sampling occurs simply because the effects of integration, positive or negative, are applicable only to a select population (i.e., those who chose or were chosen to attend integrated schools). It is well known that many White and Black parents simply refused to allow their children to attend integrated schools, even at the risk of great financial and social stress. White parents in many parts of the South chose to close the public schools altogether and to send their children to private schools. Black nationalistically-oriented parents likewise insisted on separate educational training for their children.

The group observed by researchers over the years, then, is that select sample of the population that elected to send their children to integrated schools because they were either 1) apathetic, i.e., not sufficiently opposed to integration to take an active stand against it, or 2) approving, i.e. predisposed to view racial integration as a positive educational and social phenomenon. This poses a number of questions: Does the existing research reflect only the values and attitudes of the lower-class, powerless, and the middle-class, liberal elements of our society? Does it simply show the effects of political power and not desegregation? Or does it reflect some unspecified combination of power, values, and shifting societal attitudes toward social change?

Secondly, the naturalistic/field setting of educational research in itself seriously limits the degree of control necessary for unconfounded experimentation. Ex post facto research, such as the kind utilized in these studies, examines the independent variables after they have already occurred, leaving the experimenter to examine only in retrospect their effects on the dependent variable. Variables like self-esteem and prejudiced personality, etc., are not manipulated but merely inferred to have existed in the subject and assumed to have affected the data in some way.

Thus, these studies do not appear to take into account extraneous variables (e.g., differences in the child's perception of his social milieu or cognitive field) which occur irrespective of the social dynamic of interest to the researcher but which may decidedly affect the dependent variable. Most Black schools studied, North and South, were characterized by inferior, overcrowded buildings, few supplies, poor administration, little tax monies, no recreational facilities, inadequate heat and lighting, and ill-prepared faculties. In the studies reported, then, was integration the significant independent variable? Could it have been better or different facilities; more experienced teachers; greater parental pressures to achieve (as suggested by Coles, 1967 and 1968); defensive maneuvers such as overcompensation on the part of Blacks; self-depreciation or insecurity on the part of Whites; etc.?

A Priori Cultural and Racial Assumptions

A conference of socio-economic mix held by the Social Research Group of George Washington University, under the auspices of HEW, pointed out the urgent need "to understand the interrelationships between program elements and the characteristics of children." One key element -- inevitably ignored -- is the cultural heritage emphasized by the school. With very few exceptions, the cultural heritage through which schools expect to reach and motivate their pupils is that of White, middle-class America. Schools, even those catering to a racially-mixed student body, assume that their pupils will have had the early experiences which are part of this cultural heritage and that their pupils are developing its "Weltanschauung" ("world view" or one's perception of the world).

Embedded in this cultural heritage is a kind of racist thinking which not only is at odds with the living experiences of Black children, but which contaminates most attempts to understand the issues involved in educating Blacks (and Whites). Most educators and intellectuals subscribe to various forms of the "cultural deprivation" hypothesis which states that Black youth from lower economic backgrounds suffer irreparable damage because of severely adverse and pervasive social and cultural conditions. The social conditions cited include poor, overcrowded, inadequate housing in which rats and other rodents infest the living quarters; slum neighborhoods where city services such as garbage collection and street lighting are inadequate or non-existent, and in which crime, delinquency, drugs, and prostitution are part of the child's everyday existence.

This view holds, moreover, that the lower-class ghetto child receives little nurturing, attention, or affection from his mother; his father is frequently absent or unemployed; he obtains little medical or dental care; his home life is chaotic, disorganized, and destructive. He lives in an atmosphere of apprehension and fear, of constant psychological upheaval. It is an atmosphere where there are no books, no music, no pencils and paper, no crayons, no television, no radio, no newspapers or magazines, no intellectual conversation (indeed little conversation at all), and hence no academic or scholarly stimulation. (Deutsch, 1967, Riessman, 1962).

It has been demonstrated to the satisfaction of these intellectuals that the Black child from the lower economic class has retarded reading and language skills (Deutsch, 1963, Jensen, 1969); has low-achievement motivation (McCelland, 1961); has low self-esteem and feelings of self-rejection and inferiority (Clark and Clark, 1947, Kardiner and Ovesy, 1965, Kvaraceus, et al, 1958); lacks academic discipline (Becker, 1952; Clark, 1962; Davis and Dollard, 1940, Sexton, 1961); is incapable of delaying gratification (Mischel, 1961), and hence is intellectually inferior to Whites (Herrnstern, 1971) Jensen, 1969, Morris, 1913, and Shuey, 1958 and Wilkerson, 1934).

The final assumption is that traditionally White institutions are not "culturally deprived" in any significant manner. In short, these researchers have assumed that the quality of the educational system is measured by the extent to which it fosters middle-class, White, achievement-oriented attitudes and is geared to bringing about "success" in adulthood. The assumption that people who achieve "success" in adulthood do so as the result of middle-class school systems has never been adequately documented and quite recently has been under attack (Jencks, 1972).

Purpose of this Study

The research reported here sought to discover what happens to the cognitive learning and self-esteem of Black and White Head Start pupils of differing socio-economic groups when they are exposed to educational settings with varying racial compositions (all Black, mixed, all White) and contrasting cultural emphases (Black and White). Specifically, the research sought to compare changes in the cognitive development and self-esteem of pupils in ten types of schools which were to differ as follows:

SES*	Racial Composition	Cultural Emphasis
Low	Black	Black
Middle	Black	Black
Low	Mixed	Black
Middle	Mixed	Black
Low	Mixed	White
Middle	Mixed	White
Low	White	White
Middle	White	White
Low	Black	White
Middle	Black	White

*Socio-Economic Status

A number of hypotheses were generated concerning relationships between the racial composition of the schools, the cultural emphasis of the schools, the socio-economic status of the pupils enrolled in the schools, and the cognitive development and self-esteem of these youngsters. These hypotheses were:

1) The cognitive development of pupils of middle-class status will exceed that of pupils of lower-class status, regardless of race, in a school setting whose cultural emphasis is White, but not in a school setting whose cultural emphasis is Black.

2) Racial mixing in a school enhances cognitive development, regardless of the school's cultural emphasis.

3) A school whose cultural assumptions match the cultural heritage of its pupils enhances the self-esteem of those pupils.

4) A school whose cultural assumptions do not match the cultural heritage of its pupils is less damaging to the self-esteem of Black pupils than to that of White pupils.

* * * * *

II. METHODOLOGY

The basic design of the study required studying cognitive and affective development in ten-pre-school programs that varied in socio-economic class, racial compostion, and cultural emphasis. This was to be done over a two-year period, with cognitive and self-image data collected from all pupils at the beginning and end of each school year. The initial steps of the study thus required selecting and gaining the cooperation of ten schools that fit the types we were interested in, while simultaneously selecting research instruments that could be validly used with pre-school children. We shall first describe the selection of the schools, then the selection of testing instruments, and finally our data collection procedures.

Selection of the Schools and Gaining Their Cooperation

With the assistance of the regional office of HEW, ten schools matching the characteristics shown on page 5 were selected.

The racial composition of the schools was readily identified. In deciding upon the social class make-up of the school, our informant relied very heavily upon the geographical location of the schools and the kind of outside resources to which the school had access. Lower-income schools relied almost exclusively upon public resources, whereas many of the middle-class schools had access to the advice and consultation of local colleges and universities.

The criteria used to determine the cultural emphasis of the schools were far more elusive. Our informant reported heavy reliance upon the kind of educational materials used in the schools, the kind of outside consultants utilized (those whose views about education are known), and, for schools identified as having a Black cultural emphasis, the extent of efforts to tie the school to the local (Black) community through extensive parental involvement and the hiring of indigenous aides. Some effort to verify the classification of schools was made and is reported in Appendix A.

In general, the classifications were verified. This was especially true for racial composition (see Table A-1); but only partially true for cultural emphasis. The latter concept is a difficult one to define and operationalize. Our classification is admittedly a rough one.

The schools selected were provided with information about the project in early June, 1973. Agreement to participate had to be negotiated school by school. Meetings were held with the director of the school, teachers, and, in some instances, parents as well. At each of these meetings, we carefully explained why we wanted to utilize the school, the purposes of the research, and its potential benefits to early childhood programs. In response to questions, we described the research instruments that would be used and the procedures to be followed. We assured everyone that all test results, including the final report, would be shared with the school.

By the fall of 1973, four of the ten schools had agreed to participate, two were still in the process of negotiation, and four had refused to participate. The reasons for these schools' refusal to participate derived from a general hostile attitude towards research. We will discuss this attitude shortly. Substitutes for these schools were sought, necessitating another round of meetings with staff, board members, and parents. We could not, however, locate a reasonable substitute for a middle-income school with a Black cultural emphasis. All schools with a Black cultural emphasis seemed to be low-income. Accordingly, we decided to collect data in two low-income schools with Black cultural emphases.

The very negative attitude towards research which we found seemed to be related to the "exploitative" research which had been conducted in some of the schools in previous years, the lack of any direct benefit to the schools themselves from participating in the research, and a general protectiveness of children and staff from the prying eyes of outsiders. This negative attitude was especially strong in the Black community. Thus, of the four schools which refused to participate, three were schools with a predominantly Black population.

At the time of our first data collection in December, 1973, we had all of the schools needed for the study, with the exception of two schools, which were still under negotiation. One of these schools did consent in April, 1974 to be a part of the study, but withdrew this consent in May, 1974. Since the school year was almost over, a new school was not substituted until the fall of 1974. Negotiations were completed with the other school in November, 1974.

In the 1974-75 school year, another school, consisting of four centers, was added to our pool of schools. This school was part of the training component in the 1973-74 school year, and was continued as part of the study in the second year. It is a school which, according to our measures and the judgments of knowledgeable persons, is predominantly Black, low-income, with a Black cultural emphasis. It is so identified in the data which follow.

It seemed to us that the basic reasons for schools agreeing to participate despite their generally negative attitude towards research lay in our willingness to accommodate ourselves to the routine and objectives of the school. We were open and frank about the goals of the research, the procedures we were employing, and the limitations and potential pitfalls in what we were attempting. In addition to meeting initially with the directors of the schools, the teachers, board members, and parents, we met with each one of the schools after each phase of testing was completed. These meetings were used to discuss the test results with the school personnel so that they could be aware of the concepts the children did not comprehend and could work with their children on gaining an understanding of these concepts. For our part, we gained a better understanding of our data collection procedures and the programs of each school. All schools appreciated these post-test sessions, and some made concerted efforts to assist their children in mastering the concepts of the tests. The meetings also gave the schools a greater appreciation of the value of testing and research, which increased the level of interest in the BAI pre-school project.

The Testing Instruments

Our hypotheses relate school climate to cognitive development and self-esteem. Accordingly, we needed two instruments which would measure cognition and self-esteem in pre-school children. Few tests, especially those purporting to measure self-image, have attained much reliability among pre-school children. Most of the few that do seem to have reliability are individually administered, and require extensive clinical insight and corroborative information. These resources were not available to us, and such tests had to be rejected.

After an extensive search, two data collection instruments were identified which seemed to fit our needs. One was the Boehm Test of Basic Concepts. The other was the Scamin Self-Concept and Motivation Inventory.*

Boehm Test of Basic Concepts

This test is designed to measure children's mastery of concepts considered necessary for achievement in the first year of school. It determines through a paper and pencil test whether a child understands such concepts as "top," "inside," "around," "below," "after," etc., and has a split-half reliability level of .86 for kindergarten, low-income pupils. There are norms for various grade levels, income groups, and points during the school year. There are also two alternate forms of the test which facilitated initial and follow-up testing.

Scamin Self-Concept and Motivation Inventory

This test measures role expectation, achievement investment, goal achievement needs, and self-adequacy with regard to school. The latter two components when combined measure self-image, and were the portion of the inventory of most interest to us. It is a test which can be administered on a group basis. Children are asked to indicate by marking an appropriate face whether they would feel "happy," "sad," or "neither happy nor sad" if they found themselves in one of twenty-four situations. Among the situations were: having to tell a parent that a coat was lost, making a mistake in front of the whole class, finding out about next year's class, and parents having a conversation with the teacher. Reliability for the pre-school kindergarten form of this test is .79. Grade level quartile norms are also available.

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*Boehm, Ann E., "Boehm Test of Basic Concepts," New York, The Psychological Corporation, 1970; Farrah, G.A., Milchus,N.J., and Reitz, W., "Self-Concept and Motivation Inventory (What Face Would You Wear?) Dearborn Heights, Michigan, Person-O-Metrics, 1968

Although both tests have adequate reliability, the essential question is their validity (i.e. the extent to which they measure what they purport to measure). Our post-test sessions with the schools provided us with quite a bit of information pertaining to the validity of these tests. The details are reported in Appendix B. In general, reactions to the Boehm test were positive. All of the staff at the schools felt that the concepts were important for the children to understand, and that the test results were a fair reflection of each child's level of knowledge. Reaction to the Scamin self-image test, on the other hand, was quite negative. Several of the schools felt, and our own experience confirmed, that this test did not give a true picture of the self-image of their pupils. We shall present the results of the Scamin in the following chapter, and then try to interpret what these results mean in light of the objections to and shortcomings of the test.

Observation Form

In addition to administering the Boehm and Scamin tests, our testers were required to file reports of their impressions of the operations of the schools. These field observations were extremely helpful in giving us a qualitative assessment of the climate of each school. They also identified other variables (e.g. facilities, training of staff) which affected the cognitive and affective development of the pupils. The qualitative information collected in these reports could not, however, be explicitly brought into our data analysis. Accordingly, a third instrument -- a structured observation form -- was developed and used in the second year of data collection. This form was intended to: (1) help us verify the initial classification of the schools; and (2) enable us to take into account more directly the variations among schools in facilities, training of staff, style of teachers, and the like. A copy of this instrument is presented in Appendix C. It was not tested for reliability. But the content of the form has face validity. Any information that was not readily apparent to the testers (viz. size and training of staff) was obtained from the director and/or other knowledgeable school staff.

Data Collection Procedures

Data were to be collected near the beginning of the school year and near its end for two school years, 1973-74 and 1974-75. The second year was to serve as a replication of the first year. Due to a number of difficulties, the data for 1973-74 are rather incomplete. Thus, instead of the second year serving as a replication of the first, the first year's data are more like a pilot for the fuller data for 1974-75.

We selected a group of doctoral students in education to make up a team of testers under the operational direction of a BAI staff member who was our chief contact with the schools. Before each round of testing, this team was assembled for an orientation session devoted to: discussion of the background of the project, review of the tests to be administered, description of the procedures to be followed, and assignments of testers to specific schools. Anticipated problems in administering the tests were also discussed. After the orientation session, each school was notified of the name of its tester. The testers then called their respective schools to establish a mutually convenient testing schedule.

During the actual collection of the data, the BAI staff member was in constant touch with the testers by mail or telephone to assess the progress of the data collection and to iron out problems as they occurred. Since the testers were in Boston and the BAI staff were in New York, one of the testers was designated as field coordinator for each of the rounds of data collection. It was this person's responsibility to see that the testers had the necessary forms and supplies, and to see that completed tests were properly identified, packaged, and held for pick-up or sent to BAI offices in New York.

After each round of data collection, a debriefing session was held in which the problems that had been encountered were analyzed and corrective procedures developed. We also gathered information at these sessions that helped establish the amount of trust that could be placed in the results of our study.

Although we anticipated some problems in the collection of data and made preparations for them, there were several problems for which we were not quite prepared. Among these were: (1) the routine of most schools which allowed no time in the afternoon for testing; (2) inadequate space for testing; (3) too few teachers to help monitor the tests; (4) teachers' overconcern with right answers, and (5) immaturity of many of the younger pupils. As a result of these problems, a number of changes were made. All testing was arranged for the mornings (school staff agreed that the best time for testing was 9:45 to 11:30a.m.); more testers were added to the team to help with test monitoring; only four, five, and six-year-olds were tested; and, when space was limited, carefully coordinated schedules were arranged between the testers and the teachers.

One major change was made in our data collection strategy. Because of the general antipathy to research on the part of many of our schools, and our desire to interfere as little as possible with the normal routine of the school, we originally decided to use only half of the Boehm test. This was facilitated by the fact that the Boehm test consists of two booklets of twenty-five items each. The first half was administered at the beginning of the school year, and the second half at the end of the school year. Since the items in the Boehm are generally ordered from easy to difficult, it was felt that this procedure would save administrative time without sacrificing too much in the way of generally valid information. A method of converting half-test scores into their full-test equivalents was devised and used for the first year's results.

As a result of the first year's experience, we found that we felt far more confident about the results when both booklets were used. Thus, we decided to administer the entire test for both rounds in 1974-75. Form B of the test was used in the fall, and Form A of the test in the Spring. In general, we administered one booklet the first day of testing, and the second booklet the next day. Even though this lengthened the data collection time, the schools, by 1974-75, were much more willing to allot us the extra time. As a result of the feedback sessions, they developed a better understanding of our research, and began to perceive the value of our testing for their own programs.

At the same time, we had become extremely wary of the usefulness of the Scamin test. We were meeting very strong resistance from most of our schools to its continued use. We, therefore, restricted the use of the Scamin to the latter half of the test, that portion which most directly measured self-image.

In short, over the two years of data collection, our use of the Boehm lengthened, while that of the Scamin shortened. The total amount of data collected, and upon which this report is based, is shown in Table II-1. In addition to these data, we made use of the qualitative and quantitative data about each school collected by the testers.

Table II-1 shows a number of gaps in our data. Most of these gaps reflect refusals of schools to permit administration of the Scamin. In fact, on our final round of data collection in May of 1975, we did not try to collect Scamin information. The second major gap is in the Boehm follow-up for 1973-74. Here, data were not collected because we did not anticipate the early closing of some pre-school programs, nor the chaotic rush that accompanies the closing of school. Thus, most of our analysis focused upon our data for the second year. We based our conclusions on the 1974-75 data, and then examined the 1973-74 data for any modifying information.

Table II-1 shows all of the complete data we collected over the two year time span. Some children failed to complete the Boehm test, and they are not included in the figures of Table II-1.

Particularly crucial, however, is our study of those pupils for whom we have data at both the beginning and the end of the school year. The number of pupils for which this is the case is shown in Table II-2. As would be expected, these numbers are smaller than those in Table II-1. Some children were absent when either the initial or follow-up data were collected, and consequently were not tested at those times. More important to the general hypotheses of this study, however, is the relatively high turnover of pupils in pre-school programs, Although a number of studies (see: Davitz & Ball, 1970, Deutsch, 1960, Goldberg, 1967, and Kasindorf, 1961, among others)report extensive pupil turnover in low-income urban schools, we could not find any discussion of it at the pre-school level in the literature. It would seem to be a matter deserving of close scrutiny as Head Start and pre-school programs expand. If turnover is endemic to the age group served by Head Start and other pre-school programs, then programming and the expected benefits of such programs ought to be adjusted accordingly.

Table II-2 confirms the adequacy of the 1974-75 data relative to that for 1973-74. It is also clear from Table II-2 that the Scamin data are in scant supply. Given our own doubts about the validity of this test, this is not as serious a shortcoming as it might appear. The scantiness of the Scamin data will assist us in treating the results it produces with the proper caution.

Table II-1

Number of Pupils Tested by School Type
in 1973-74 and 1974-75

	1973-74				1974-75			
	Initial		Follow-up		Initial		Follow-up	
School Type*	Boehm	Scamin	Boehm	Scamin	Boehm	Scamin	Boehm	Scamin
Low-Black-Black[a]	54	34	79		83		101	
Middle-Black-Black	No School Obtained for this Category							
Low-Mixed-Black[b]	104				37		45	
Middle-Mixed-Black	26		16	16	19	22	15	
Low-Mixed-White	8				19	17	19	
Middle-Mixed-White	52				34		104	
Low-White-White	21				18		20	
Middle-White-White	7				3			
Low-Black-White	Initial Refusal				35	31	39	
Middle-Black-White	19				26	25		
Training[c]	36	33	60	31	31		21	
Totals	327	67	155	47	305	95	364	0

Notes:

*The labels represent social class, racial composition, and cutural emphasis, respectively.

a. Two schools were in this category

b. In the first year six centers comprised this category, in the second year three schools.

c. Four centers comprised this category. In the first year the schools in this category were used as part of the training component of this project. In the second year they were not. They will be treated in the next chapter as low-income schools with a Black racial composition and cultural emphasis.

Table II-2

Number of Pupils for Whom Both Initial and Follow-Up Data Were Collected

School Type*	1973-74		1974-75	
	Boehm	Scamin	Boehm	Scamin
Low-Black-Black	52	6	62	0
Middle-Black-Black	No School in this Category			
Low-Mixed-Black	0	0	25	0
Middle-Mixed-Black	16	0	13	0
Low-Mixed-White	0	0	17	0
Middle-Mixed-White	0	0	30	0
Low-White-White	0	0	15	0
Middle-White-White	0	0	0	0
Low-Black-White	Initial Refusal		31	0
Middle-Black-White	0	0	0	0
Totals	68	6	193	0

*The labels represent social class, racial composition, and cultural emphasis, respectively.

Four special points need to be made about the data we do have:

1) Since no middle-class school with a Black racial composition and cultural emphasis could be located, our hypothesis involving a comparison of the cognitive development of Black lower- and middle-class pupils in a school whose cultural emphasis is Black could not be tested.

2) Related to this is a general shortage of data for middle-class schools. We have initial and follow-up information on the same middle-class pupils only for the two schools with a mixed racial composition.

3) The data for the Middle-Mixed-White school represents (except for the 1974-75 follow-up data) only a portion of the pupils in that school. This school required protracted negotiations before permission to include it could be obtained. We persisted in these negotiations not only because the school was one of the few that fit its type, but also because this school administered the Boehm test -- both initial and follow-up -- as part of its regular test procedures. Thus, we would have these data available if permission were granted. Some months after permission was granted, we discovered that the Boehm test was administered only to Title I pupils within the school. Thus, we have initial and follow-up data for only the Title I pupils in this school.

4) Given the relatively small number we worked with some cases, and our unwillingness to assume that the mean scores on either the Boehm or the Scamin tests represent interval data, we utilized non-parametric tests (primarily the Mann Whitney) in our analysis.

The data we were able to collect did not permit a full test of our hypothesis. There were gaps which precluded control of social class, racial composition, and cultural emphasis in all instances. We could, however, partially test each of the hypotheses. A discussion of the results obtained appears later in this report.

III. COGNITIVE DEVELOPMENT AND SELF-ESTEEM

Cognitive Development

As was pointed out in the Methodology section, most reliance can be placed on the cognitive data for the 1974-75 school year. We shall, accordingly, focus our analysis upon these data, and then fill in with the 1973-74 data. Once we have analyzed the cognitive data, we shall turn our attention to the self-image data.

Conceptual Knowledge at the Beginning of the School Year

Table III-1 shows the mean Boehm Test scores by type of school at the beginning of the 1974-75 school year. Also shown are the number of pupils tested and the standard deviation for each school. The results for each type of school can be compared with the normative data on the bottom lines of Table III-1.

A perusal of Table III-1 shows that the mean scores for our thirteen schools ranged from a low of 23.2 to a high of 41.7. The mean score for all schools combined was 30.1. In general, mean scores for the schools we studied exceeded the norms for the test. All but three schools (two of the low-income schools with a mixed racial composition and a Black cultural emphasis, and the middle-class school with a White cultural emphasis and Black pupils) were above the norm for their respective socio-economic class. Five of the remaining ten schools had mean scores which were statistically higher than their appropriate norm. These are indicated by the asterisks in Table III-1. It is most important for the purposes of this report to note that the schools that were predominantly Black, lower-class, and with a Black cultural emphasis were ahead of national norms.

One possible explanation for the significantly higher performance of the pupils in the Boston sample is that the normative data for the Boehm test were collected in September and October, whereas the Boston data were collected in November and December. Whether this two-month difference could account for the overall difference in the two samples is unknown. On the basis of extrapolated data, which will be presented later, it appears unlikely that this could be the case. In any case, the students in our group of schools began the school year with at least the same conceptual knowledge as the national sample used to standardize the Boehm test. A few of the schools, notably those schools which were predominantly Black, low-income, and had a Black cultural emphasis, had mean scores that were statistically higher than their norm on the national sample.

Table III-1

Mean BTBC Scores, Standard Deviations and N's for Each School, Beginning of School Year 1974-75

School Type[a]	Mean	Standard Deviation	Number of Pupils
Low-Black-Black:A	30.7*	10.4	16
Low-Black-Black:B	34.1***	8.6	67
Low-Black-Black:C	30.5**	7.5	31
Low-Mixed-Black:A	24.1	3.9	9
Low-Mixed-Black:B	28.8	5.5	13
Low-Mixed-Black:C	23.2	7.3	15
Middle-Mixed-Black	35.6	8.5	19
Low-Mixed-White	31.5**	5.1	19
Middle-Mixed-White	27.2	5.7	34
Low-White-White	28.2	7.2	18
Middle-White-White	41.7*	2.4	3
Low-Black-White	25.8	8.4	35
Middle-Black-White	31.5	6.4	26
All Schools	30.1	8.3	305
Lower-Class Norm	25.5	8.9	1921
Middle-Class Norm	31.8	8.6	912

[a]The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters are used to distinguish among different schools of the same type.

*.05>P≥.01
**.01>P>.001
***P<.001

Note: Middle-class schools, except for Middle-Mixed-White were tested against the middle-class norm; all others, against the lower-class norm. Although the Middle-Mixed-White school is a middle-class school, only lower-class pupils were tested on the initial round of data collection.

Our discovery, through the initial testing, that there were certain schools whose students' level of conceptual knowledge was above average at the beginning of the school year led us to try to identify the distinguishing characteristics of such schools. Several variables were isolated for particular study. Among these were the three variables -- class, racial composition, and cultural emphasis -- that constituted our classification of schools. In addition, school facilities, the training of staff, teacher-pupil ratio, and the educational model of the school were examined.

Classification Variables and Initial Conceptual Knowledge: None of the three variables that made up the classification of the schools showed a statistically significant relationship below the .05 level to a school's initial attainment on the Boehm test. The results are shown in Tables III-2, III-3 and III-4 for social class, racial composition, and cultural emphasis respectively.

The social class variable (Table III-2) comes the closest to attaining statistical significance. The reason that it fails to attain the .05 level of statistical significance is due to the relatively low performance of the pupils in the middle-class school with a mixed racial composition and a White cultural emphasis. The pupils tested, it may be recalled, were all lower-class, even though the nature of the school was middle-class. If we assume that the middle-class pupils in this school had as much cognitive knowledge as the pupils in the other middle-class schools of our sample, then the results of Table III-2 would be statisically significant. The results would also be statistically significant if this school were classified as a lower-class school. It seems, then, that in conformance with findings from virtually all studies of academic achievement, social class makes a difference in the level of performance of pupils. The higher the social class composition of a school, the higher the initial conceptual knowledge of the pupils in that school.

Our other two variables, racial composition and cultural emphasis do not attain statistical significance. This is true despite the fact that predominantly Black low-income schools with a Black cultural emphasis performed above the norm for low-income schools.

Other Variables and Initial Conceptual Knowledge: Cognitive development is affected by a wide range of variables. Most important among these for pre-school children are the training of staff, the facilities of the school, the educational model of the school, and pupil-teacher ratio. Data to measure these variables were collected on observation forms. (See Appendix C.) Procedures followed and results obtained are described below.

Question #15 asked about the educational level of staff. Possible answers ranged from graduate school in education to less than high school graduation. The possible levels that could be attained by staff were weighted as follows:

Table III-2

Social Class and Initial Mean BTBC Scores

	Lower Class		Middle Class	
School Type[a]	Mean	Rank	Mean	Rank
Middle-White-White			41.7	1
Middle-Mixed-Black			35.6	2
Low-Black-Black: B	34.1	3		
Low-Mixed-White	31.5	4.5		
Middle-Black-White			31.5	4.5
Low-Black-Black: A	30.7	6		
Low-Black-Black: C	30.5	7		
Low-Mixed-Black: B	28.8	8		
Low-White-White	28.2	9		
*Middle-Mixed-White			27.2	10
Low-Black-White	25.8	11		
Low-Mixed-Black: A	24.1	12		
Low-Mixed-Black: C	23.2	13		
Sum of Ranks		73.5		17.5

Mann-Whitney Test: U=7.5 P>.05

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters are used to distinguish among different schools of the same type.

*If the $\bar{X}$ middle-class score of 33.8 is added for the 67 middle-class pupils in this school, the $\bar{X}$ school score becomes 31.5 This would produce a U of 3, and a P of .02.

Table III-3

Racial Composition and Initial Mean BTBC Score

	Black		Mixed		White	
School Type[a]	Mean	Rank	Mean	Rank	Mean	Rank
Middle-White-White					41.7	1
Middle-Mixed-Black			35.6	2		
Low-Black-Black: B	34.1	3				
Low-Mixed-White			31.5	4.5		
Middle-Black-White	31.5	4.5				
Low-Black-Black: A	30.7	6				
Low-Black-Black: C	30.5	7				
Low-Mixed-Black: B			28.8	8		
Low-White-White					28.2	9
Middle-Mixed-White			27.2	10		
Low-Black-White	25.8	11				
Low-Mixed-Black: A			24.1	12		
Low-Mixed-Black: C			23.2	13		
Sum of Ranks		31.5		49.5		10

Kruskal-Wallis One-Way Analysis of Variance

$H = 1.3$. $df = 2$ $.30 > P > .20$

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-4

Cultural Emphasis and Initial Mean BTBC Scores

	Black		White	
School Type[a]	Mean	Rank	Mean	Rank
Middle-White-White			41.7	1
Middle-Mixed-Black	35.6	2		
Low-Black-Black: B	34.1	3		
Low-Mixed-White			31.5	4.5
Middle-Black-White			31.5	4.5
Low-Black-Black: A	30.7	6		
Low-Black-Black: C	30.5	7		
Low-Mixed-Black: B	28.8	8		
Low-White-White			28.2	9
Middle-Mixed-White			27.2	10
Low-Black-White			25.8	11
Low-Mixed-Black: A	24.1	12		
Low-Mixed-Black: C	23.2	13		
Sum of Ranks		51		40

Mann-Whitney Test:

U = 19 P = .418

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Graduate School of Education	5
Other Graduate School	4
College Graduation - Education Major	4
College Graduation - Other Major	3
Some College - Education Major	3
Some College - Other Major	2
High School Graduation	1
Less Than High School Graduation	0

The number of staff at each of these levels was recorded, and the appropriate weight for each level was assigned to the staff member. The mean score for each school was taken as an overall measure of the amount of training of staff. These means ranged from a low of 1.67 to a high of 4.25, with a median mean of 2.90.

As Table III-5 shows, training of staff is not related to a school's performance on the Boehm test. The two measures have a Tau rank correlation of +.21, which is not statistically significant.

The first and second items of the observation questionnaire asked whether the school had certain facilities and equipment, and question no.4 asked whether the school seemed overcrowded. These three items were combined into a facilities score.

No school lacked more than one of the nine items of equipment and facilities listed in question no.1. Two schools had no cubbies or lockers for personal belongings, three schools had no outdoor play area, and one school had no area for quiet activities. These schools received a score of minus one.

All schools were reported as having adequate lighting. But for eight schools, the lighting was artificial only. These eight schools also received a score of minus one.

One school was reported as overcrowded. This school also received minus one.

Table III-5

Training of Staff and Initial Mean BTBC Scores

	BTBC		Staff Training	
School Type[a]	Mean	Rank	Score	Rank
Middle-White-White	41.7	1	4.25	1
Middle-Mixed-Black	35.6	2	3.52	3
Low-Black-Black: B	34.1	3	2.90	7
Low-Mixed-White	31.5	4.5	2.50	10.5
Middle-Black-White	31.5	4.5	3.00	5
Low-Black-Black: A	30.7	6	2.14	13
Low-Black-Black: C	30.5	7	2.39	12
Low-Mixed-Black: B	28.8	8	2.91	6
Low-White-White	28.2	9	2.83	8
Middle-Mixed-White	27.2	10	4.00	2
Low-Black-White	25.8	11	3.44	4
Low-Mixed-Black: A	24.1	12	2.75	9
Low-Mixed-Black: C	23.2	13	2.50	10.5

Rank Correlation (Tau) = +.21

P = .3174

a. The labels respresent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

An index of adequacy of facilities was then constructed by subtracting each school's minus score from three. Thus, schools which had adequate facilities according to this measure received a score of three. There were five such schools. Schools which were either overcrowded, or had only artificial lighting, or lacked one of the nine facilities or equipment items, received a score of two. There were four such schools. Schools which suffered two of the three deficiencies listed above received a score of one. There were four such schools. And, there were no schools which had all three deficiencies. If there had been any such schools, they would have received a score of zero.

Table III-6 shows that the facilities of a school, as measured by this index, is not related to initial BTBC score. The two measures have a Tau rank correlation of -.27 which is not statistically significant.

There have been several schemes for classifying the educational style of schools. We shall dintinguish between what can be called a teacher-centered model of education and a pupil-centered model. Questions 5 and 7 were used to make this distinction. In Question 7 note was taken of whether the children decided upon their own activities, whether the teacher did, or whether both did. Question 5 asked about the noise level in the school, and the source of that noise. Observers could note that the school was quiet, or that it was noisy due to the yelling of teachers, fights and disagreements among the children, or because the pupils were happily playing. These two items were combined in the following way, and the two types of educational models defined as shown:

Noise Level:

High - Happy Pupils

" - Fights

" - Teacher Yelling

Low

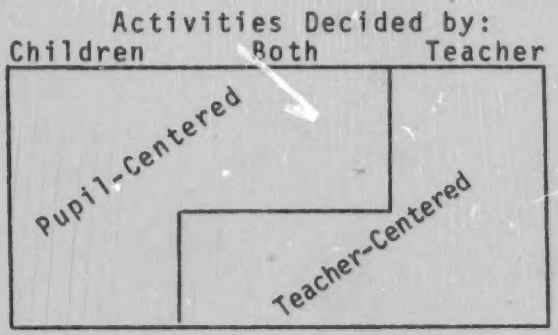

Table III-6

School Facilities and Initial Mean BTBC Scores

	Three		Two		One	
School Type[a]	Mean	Rank	Mean	Rank	Mean	Rank
Middle-White-White			41.7	1		
Middle-Mixed-Black					35.6	2
Low-Black-Black: B	34.1	3				
Low-Mixed-White			31.5	4.5		
Middle-Black-White	31.5	4.5				
Low-Black-Black: A					30.7	6
Low-Black-Black: C			30.5	7		
Low-Mixed-Black: B					28.8	8
Low-White-White			28.2	9		
Middle-Mixed-White	27.2	10				
Low-Black-White	25.8	11				
Low-Mixed-Black: A	24.1	12				
Low-Mixed-Black: C					23.2	13

Rank Correlation (Tau) = -.27

P = .2006

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Using this method, four schools were identified as teacher-centered and nine were identified as pupil-centered. It should be noted that all but two of the schools reported that both the teachers and pupils decided upon activities. In ten schools where joint selection occurred, the noise level was deemed high due to the happy excitement of the children.

Table III-7 shows that educational model is not related to initial BTBC scores. Thus, parents of pre-school children, irrespective of the children's level of advancement, do not select pre-school programs according to their educational model.

Teacher-pupil ratios were computed on the basis of the total staff of the school, exclusive of those whose responsibilities required no interaction with the pupils. Thus, teachers, teachers aides, consultants, and directors were included; but secretarial and maintenance staff were excluded. Table III-8 shows that pupil-teacher ratio is related to initial BTBC scores. The lower this ratio, the higher the mean BTBC score for that school. The measure of conceptual knowledge and pupil-teacher ratio have a Tau rank correlation of +.42, which is statistically significant at the .05 level.

Of seven variables which were correlated to initial score on the Boehm test, only two: social class and pupil-teacher ratio, were shown to be statistically related. Middle-class pupils are initially more familiar with the kinds of concepts contained in the BTBC, and they are quite likely to enter pre-school programs that have a low pupil-teacher ratio. They are also, as a comparison of Tables III-2 and III-5 show, are likely to enter programs which have better trained staff, although the latter is not related to initial BTBC scores.

Evidence from the 1973-74 Data: The results from our 1973-74 data collection do not at all conform to the foregoing picture formed by the 1974-75 data. Table III-9, which compares the initial means for the two years, shows that, in general, the 1973-74 scores are lower than those for 1974-75. The 1973-74 overall mean is only 25.0, compared to 30.1 for 1974-75. The comparison also reveals little relationship between the high achieving schools in 1973-74 and the high achievers a year later. The rank correlation between the two sets of scores is -.20.

Although firm evidence is lacking, it is our general impression that the difference between the 1973-74 and 1974-75 sets of data reflects increased familiarity with the Boehm test on the part of the teachers and/or pupils of the participating schools. It may also reflect greater efficiency on BAI's part in administering the test. To the extent that this presupposition is true, the 1974-75 data are free of the misperceptions and anxieties that tend to lower test scores. The scores may also be inflated because of students' familiarity with the items. However, since the actual pupils who took the test were not the same in both years, we judge the latter not to be the case.

Table III-7

Educational Model and Initial Mean BTBC Score

	Pupil-Centered		Teacher-Centered	
School Type[a]	Mean	Rank	Mean	Rank
Middle-White-White	41.7	1		
Middle-Mixed-Black	35.6	2		
Low-Black-Black: B			34.1	3
Low-Mixed-White	31.5	4.5		
Middle-Black-White	31.5	4.5		
Low-Black-Black: A			30.7	6
Low-Black-Black: C	30.5	7		
Low-Mixed-Black: B	28.8	8		
Low-White-White	28.2	9		
Middle-Mixed-White			27.2	10
Low-Black-White	25.8	11		
Low-Mixed-Black: A			24.1	12
Low-Mixed-Black: C	23.2	13		
Sum of Ranks		60		31

Mann-Whitney Test:

U = 15

P > .05

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-8

Pupil-Teacher Ratio and Initial Mean BTBC Score

	BTBC Score		Pupil-Teacher Ratio	
School Type[a]	Mean	Rank	Mean	Rank
Middle-White-White	41.7	1	0.7	1
Middle-Mixed-Black	35.6	2	0.8	2
Low-Black-Black: B	34.1	3	4.5	10
Low-Mixed-White	31.5	4.5	3.5	8
Middle-Black-White	31.5	4.5	2.2	5
Low-Black-Black: A	30.7	6	1.5	3
Low-Black-Black: C	30.5	7	3.0	7
Low-Mixed-Black: B	28.8	8	5.0	11
Low-White-White	28.2	9	1.6	4
Middle-Mixed-White	27.2	10	8.2	13
Low-Black-White	25.8	11	3.9	9
Low-Mixed-Black: A	24.1	12	3.0	6
Low-Mixed-Black: C	23.2	13	7.0	12

Rank Correlation (Tau) = +.42

P = .0456

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-9

Initial Performance on the BTBC, 1973-74 and 1974-75

School Type[a]	BTBC Mean Scores 1973-74	1974-75
Middle-White-White	27.4	41.7
Middle-Mixed-Black	24.1	35.6
Low-Black-Black: B	21.2	34.1
Low-Mixed-White	27.6	31.5
Middle-Black-White	26.1	31.5
Low-Black-Black: A	12.4	30.7
Low-Black-Black: C	ND	30.5
Low-Mixed-Black: B	21.9	28.8
Low-White-White	31.5	28.2
Middle-Mixed-White	30.8	27.2
Low-Black-White	ND	25.8
Low-Mixed-Black: A	30.7	24.1
Low-Mixed-Black: C	25.3	23.2
All Schools	25.0	30.1

ND = No data available

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

One other sharp difference between the 1973-74 and 1974-75 data must be noted. It will be recalled that the low-income schools with a Black racial composition and cultural emphasis did exceptionally well at the beginning of the 1974-75 school year. That was not the case in 1973-74. Initial performance on the 1973-74 BTBC is related to White cultural emphasis, as Table III-10 shows. Of the six schools which performed best on the BTBC, five were schools with a White cultural emphasis, while the five poorest performing schools all had a Black cultural emphasis. This difference is statistically significant (Mann-Whitney test) at the .01 level.

This result lends some credence to our speculation about the reason for the sharp difference in the sets of data for the two years. It is the schools with a Black cultural emphasis that are least likely to be familiar with testing materials of the BTBC type.

Conceptual Knowledge at the End of the School Year

At the end of the 1974-75 school year, the results on the Boehm Test of Basic Concepts were as shown in Table III-11. As in our earlier table, these results can be compared to the norms for the BTBC. It should be noted, however, that these norms are for the middle of the school year, not the end. No BTBC norms are available for the end of the school year. Hence, a large portion of the superior performance of the schools in our sample can be attributed to the three to four month difference between these two points in time. None of the schools in our sample performed below the norm for their respective socio-economic class, and six of the schools showed statistically significant higher performances.

The crucial question for our investigation, however, is not the performance of various schools relative to the norm for their socio-economic class but the change in conceptual knowledge during the course of the school year. We shall examine this shortly, but first we shall see whether we can identify any variables that were associated with superior performance on the BTBC at the end of the school year. We shall use the same set of variables that were used in examining this question for the beginning of the school year.

Classification Variables and Follow-Up Conceptual Knowledge: At the beginning of the school year, only social class, of our three classification variables, was related to BTBC performance. This was also true at the end of the school year (see Table III-12). Data at the end of the school year were available only for two middle-class schools. But these schools performed the best on the BTBC. The difference in performance levels is statistically significant at the .05 level. As was true for the initial 1974-75 data, neither racial composition nor cultural emphasis of the schools was related to BTBC knowledge.

Other Variables and Conceptual Knowledge at Follow-Up: At the beginning of the school year, pupil-teacher ratio was found to be related to BTBC performance. By the end of the school year, this relationship no longer exists (see Table III-13); but a correlation between training of staff and BTBC performance has taken its place (Table III-14). None of the other variables -- facilities and equipment of the school nor educational model -- were related to conceptual knowledge at the end of the school year.

Table III-10

Cultural Emphasis and Initial Mean BTBC Scores for 1973-74

	Black		White	
School Type[a]	Mean	Rank	Mean	Rank
Low-White-White			31.5	1
Middle-Mixed-White			30.8	2
Low-Mixed-Black: A	30.7	3		
Low-Mixed-White			27.6	4
Middle-White-White			27.4	5
Middle-Black-White			26.1	6
Low-Mixed-Black: C	25.3	7		
Middle-Mixed-Black	24.1	8		
Low-Mixed-Black: B	21.9	9		
Low-Black-Black: B	21.2	10		
Low-Black-Black: A	12.4	11		
Sum of Ranks		48		18

Mann-Whitney Test:

U = 3 P = .015

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-11

Mean BTBC Scores, Standard Deviations and N's:
1974-75 Follow-up

School Type[b]	Mean	Standard Deviation	Number of Pupils
Middle-Mixed-White[a]	40.7***	6.8	104
Middle-Mixed-Black	40.2*	7.0	15
Low-Black-Black: B	35.0***	7.0	76
Low-White-White	34.6**	6.2	20
Low-Black-White	34.2***	6.2	39
Low-Mixed-White	33.9**	5.0	19
Low-Mixed-Black: B	31.2	7.6	16
Low-Black-Black: A	31.0	10.3	25
Low-Mixed-Black: C	30.7	7.7	17
Low-Mixed-Black: A	30.7	8.0	12
Low-Black-Black: C	30.0	4.6	21
All Schools	37.3	8.2	394
Lower-Class Norm	28.4	8.1	162
Middle-Class Norm	35.3	8.0	452

*.02 > p ≥ .01
**.01 > p ≥ .001
***p < .001

b. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

a. These results include both Title I and non-Title I pupils. If the data are restricted to Title I pupils, the results are: $\bar{X}$ = 33.8; S.D. = 5.7; and N = 37. This mean is still statistically significant above the lower-class mean with p .001.

Table III-12

Social Class and Follow-up Mean BTBC Scores

	Lower		Middle	
School Type[a]	Mean	Rank	Mean	Rank
Middle-Mixed-White			40.7	1
Middle-Mixed-Black			40.2	2
Low-Black-Black: B	35.0	3		
Low-White-White	34.6	4		
Low-Black-White	34.2	5		
Low-Mixed-White	33.9	6		
Low-Mixed-Black: B	31.2	7		
Low-Black-Black: A	31.0	8		
Low-Mixed-Black: A	30.7	9.5		
Low-Mixed-Black: C	30.7	9.5		
Low-Black-Black: C	30.0	11		
Sum of Ranks		63		3

Mann-Whitney Test:

$U = 0$

$p < .05$

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-13

Pupil-Teacher Ratio and Follow-up Mean BTBC Scores

	BTBC Scores		Pupil-Teacher Ratio	
School Type[a]	Mean	Rank	Mean	Rank
Middle-Mixed-White	40.7	1	8.2	11
Middle-Mixed-Black	40.2	2	0.8	1
Low-Black-Black: B	35.0	3	4.5	8
Low-White-White	34.6	4	1.6	3
Low-Black-White	34.2	5	3.9	7
Low-Mixed-White	33.9	6	3.5	6
Low-Mixed-Black: B	31.2	7	5.0	9
Low-Black-Black: A	31.0	8	1.5	2
Low-Mixed-Black: A	30.7	9.5	3.0	4
Low-Mixed-Black: C	30.7	9.5	7.0	10
Low-Black-Black: C	30.0	11	3.0	5

Rank Correlation (Tau) = -.01

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-14

Staff Training and Follow-up BTBC Scores

	BTBC Score		Training Score	
School Type[a]	Mean	Rank	Mean	Rank
Middle-Mixed-White	40.7	1	4.00	1
Middle-Mixed-Black	40.2	2	3.52	2
Low-Black-Black: B	35.0	3	2.90	5
Low-White-White	34.6	4	2.83	6
Low-Black-White	34.2	5	3.44	3
Low-Mixed-White	33.9	6	2.50	8.5
Low-Mixed-Black: B	31.2	7	2.91	4
Low-Black-Black: A	31.0	8	2.14	11
Low-Mixed-Black: A	30.7	9.5	2.75	7
Low-Mixed-Black: C	30.7	9.5	2.50	8.5
Low-Black-Black: C	30.0	11	2.39	10

Rank Correlation (Tau) = +.67

p = .0038

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

It might not seem surprising to find that teacher training was related to BTBC performance. But in the light of several studies (e.g. Coleman) which have shown little relationship between educational achievement and educational input variables, it is reassuring to discover an aspect of the educational system that does seem to make a difference in educational attainment.

Social class, however, was also related to mean BTBC scores at the end of the school year. It was also related to teacher training, as a comparison of the right hand columns of Tables III-12 and III-14 shows. If the data of Table III-14 were restricted to the lower-class schools, the rank correlation between staff training and BTBC scores drops to +.44. This correlation is just shy of statistical significance at the .05 level (P = .06). We may, nevertheless, conclude that teacher training had an effect, independent of social class, upon the level of conceptual knowledge at the end of the school year.

Evidence from the 1973-74 Data: Follow-up data from 1973-74 is very scanty. Only three schools, all with Black cultural emphases, are represented. Their mean BTBC scores, standard deviations, and number of pupils tested are shown below:

School	Mean	S.D.	Number
Middle-Mixed-Black	36.1	11.6	16
Low-Black-Black:B	33.3	8.4	57
Low-Black-Black:A	29.9	9.1	22

The relative ranking of these schools on performance at the end of the school year conforms to that for the 1974-75 data. The data are too few to precisely test whether the same variables as in 1974-75 are related to end of year performance. But nothing in the scores nor the relative ranking of the schools contradicts the 1974-75 findings.

Change in Conceptual Knowledge

Conceptual knowledge at the end of the school year is a function of both the amount of such knowledge a pupil had at the beginning of the school year, and the growth in that knowledge during the school year. Our hypotheses focus upon cognitive development, that is, the growth in conceptual understanding during the school year. In order to study this directly, we must examine changes in BTBC scores between the beginning of the school year and its end.

Table III-15 presents the overall change in mean scores for each school. The figures shown in the "difference" column were obtained by subtracting each school's mean score in Table III-1 from its mean score in Table III-11. The difference represents the average growth in conceptual knowledge for each school.

These differences were tested for statistical significance using a one-tailed t-test for correlated data. Five of the eleven differences attained statistical significance. These schools (the first five listed in Table III-15) showed growth which cannot be attributed to chance.

Table III-15

Difference in Initial and Follow-up Mean BTBC Scores

School Type[a]	Difference	t-test	
Low-Black-White	8.4	t = 4.10	$p < .001$
Low-Mixed-Black: C	7.5	t = 2.73	$.02 > p > .01$
Middle-Mixed-White*	6.6	t = 4.80	$p < .001$
Low-Mixed-Black: A	6.6	t = 2.28	$.05 > p > .02$
Low-White-White	6.4	t = 2.86	$.01 > p > .001$
Middle-Mixed-Black	4.6	t = 1.64	$.20 > p > .10$
Low-Mixed-White	2.4	t = 1.43	$.20 > p > .10$
Low-Mixed-Black: B	2.4	t = 0.92	$.40 > p > .30$
Low-Black-Black: B	0.9	t = 0.68	$.50 > p > .40$
Low-Black-Black: A	0.3	t = 0.09	$p > .90$
Low-Black-Black: C	-0.5	t = 0.27	$.90 > p > .80$

*This difference is for Title I pupils only, since no initial BTBC data were collected for non-Title I pupils.

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

The data of Table III-15 do not precisely reflect conceptual growth, however. Some pupils took the BTBC at the beginning of the school year, but not at the end of the school year. The reverse was true for other pupils. This situation was due, primarily, to turnover in the pupil population of the school. It is likely that those pupils who found it difficult to adjust to school were the ones whose parents withdrew them during the year. By the same token, those pupils who entered in the middle of the school year did not receive the benefit of the full program of the school. On both counts, we can surmise that pupils who were present during the total school year would have performed better than those who were present for only part of the year.

Table III-16 presents initial and follow-up BTBC means for just those pupils who took both tests. If we compare the follow-up means from this table with the means (follow-up) of Table III-11, we will see that the means for students who took both tests are higher, with one exception (Middle-Mixed-White). However, when the initial means of Table III-16 are compared to the initial means of III-1, only three schools have higher means in Table III-16. These comparisons can be interpreted to mean that, although poorer pupils do not drop out of pre-school, those who start school in the middle of the year do not catch up to their classmates who have participated for for the full year.

More important for our purposes is a comparison of Tables III-15 and III-16 -- specifically, a comparison of the "Jifference" columns of these two tables. In all but one of the comparisons (the Middle-Mixed-Black school), the differences for pupils present all year (Table III-16) are larger than the differences for the beginning of the year compared to the end of the year cohorts (Table III-15). The chance probability of such a consistent difference between the two tables is about three in five hundred. This supports the inference made earlier that pupils present the full year perform better on the BTBC than those present for only part of the year. The inference is also consistent with our finding that training of staff is positively related to BTBC achievement at the end of the school year.

Although the differences in initial and follow-up scores is larger for pupils who took both tests, the relative ranking of the schools in terms of the magnitude of that difference is nearly the same. The ranking of schools obtained by these two methods is +.56, with P = .0082. The actual differences in the ranking can be observed by comparing Tables III-15 and III-16. In only two instances does the position of a given school differ by more than two ranks. Thus, the difference between full-year and partial-year attendees in growth and conceptual knowledge is minimally affected by type of school.

Table III-16

Initial and Follow-up Mean BTBC Scores For Pupils Taking Both Tests

School Type[a]	Mean BTBC Scores: Initial	Follow-up	Difference	Number of Pupils
Low-Mixed-Black: C	26.3	35.7	9.3	6
Low-Black-White	25.3	34.4	9.1	31
Low-White-White	28.2	35.1	6.9	15
Middle-Mixed-White*	26.9	33.7	6.8	30
Low-Mixed-Black: A	24.0	30.8	6.8	9
Low-Black-Black: A	27.9	34.4	6.5	13
Low-Mixed-Black: B	26.2	31.7	5.5	10
Middle-Mixed-Black	36.8	41.5	4.6	13
Low-Black-Black: B	34.2	37.8	3.6	39
Low-Black-Black: C	27.5	30.5	3.0	10
Low-Mixed-White	31.5	34.2	2.7	17

*This difference is for Title I pupils only, since no initial BTBC data were collected for non-Title I pupils.

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-15 revealed that the change in scores for some schools could not be attributed to chance fluctuations in scores. Is this also true for the data of Table III-16, and is it true for the same schools? The comparison is presented in Table III-17. The difference in means for pupils who took both tests is presented in the column identified as "turnover," whereas the data for persons is presented in the column labeled "cohort." Differences which are statistically significant according to the t-test are identified by asterisks. For the turnover group, six of the ten differences are statistically significant. Four of these (three lower-class schools, one of which has a Black cultural emphasis; and a middle-class school with a White cultural emphasis) coincide with cohort differences that are statistically significant. One additional difference (school B of the Low-Black-Black type) is also statistically significant at the .05 level. School A of the Low-Mixed-Black type shows a statistically significant difference at the .05 level for the cohort data, but not for the turnover group. For the two remaining schools, it is ambiguous whether or not significant growth takes place. It can be concluded that significant conceptual growth takes place in four schools (the first three and the fifth listed in Table III-17) and that it does not take place in five schools.

Because of a shortage of data, we cannot fully test our two original hypotheses pertaining to cognitive development. We can, however, partially test these hypotheses.

Hypothesis #1: The cognitive development of pupils of middle-class status will exceed that of pupils of lower-class status, regardless of race, in a school setting whose cultural emphasis is White, but not in a school setting whose cultural emphasis is Black.

Although we have complete data for only two middle-class schools, fortunately, one of these schools has a White cultural emphasis, and the other has a Black cultural emphasis. When conceptual growth for students in these schools is compared to that of their lower-class counterparts, the results are supportive of this hypothesis. The appropriate data are shown in Table III-18. The relevant comparisons are the means for schools with Black and White cultural emphases. The t-test shows that there is a statistically significant difference in conceptual growth between students in middle- and lower-class schools when the cultural emphasis is White, but no such difference between socio-economic classes when the cultural emphasis is Black.

Due to the limited comparisons we can make, the hypothesis cannot be said to have been confirmed. But, these results point to its validity.

Table III-17

Statistical Significance of Difference in Initial and Follow-up BTBC Means for Pupils Who Did (Turnover) and Those Who Did Not (Cohort) Take Both Tests

School Type[a]	Turnover	Cohort
Low-Mixed-Black: C	9.3*	7.5*
Low-Black-White	9.1***	8.4***
Low-White-White	6.9**	6.4**
Low-Mixed-Black: A	6.8	6.6*
Middle-Mixed-White	6.8***	6.6***
Low-Black-Black: A	6.5	0.3
Low-Mixed-Black: B	5.5	2.4
Middle-Mixed-Black	4.6	4.6
Low-Black-Black: B	3.6*	0.9
Low-Black-Black: C	3.0	-0.5
Low-Mixed-White	2.7	2.4

*.05 > p > .01
**.01 > p > .001
***p < .001

a. The labels represent social class, racial composition, and cultural emphasis, respectively. Capital letters distinguish among different schools of the same type.

Table III-18

Mean Change in BTBC Scores According to Cultural Emphasis and Social Class for Racially Mixed Student Population

	Lower Class	Middle Class	Difference
White Cultural Emphasis	2.7	6.8	4.1*
N =	(17)	(30)	
Black Cultural Emphasis	6.9***	4.6	-2.3**
N =	(25)	(13)	

*t = 2.98, df = 45 $>$ .01 p $>$ .001
**t = 1.00 df = 36 $>$ .40 p $>$ .30

***Computation for all three schools combined.

Table III-19

Mean Change in BTBC Scores According to Racial Composition and Cultural Emphasis for Lower-Class Schools

	Racially Mixed	Homogeneous (Black Racial Composition)	Difference
Black Cultural Emphasis	6.9***	4.1***	2.8*
N =	(25)	(62)	
White Cultural Emphasis	2.7	8.4****	-5.7**
N =	(17)	(46)	

*t = 1.56 df = 85 .20>p>.10
**t = 2.98 df = 61 .01>p>.001

***Computation for all three schools combined in each category.
****Computation for both schools combined.

Hypothesis #2: Racial mixing enhances cognitive development regardless of the school's cultural emphasis.

Thus, students in schools whose racial composition is predominantly Black or White should show less conceptual growth than those in schools whose racial composition is mixed. The appropriate data are presented in Table III-19. Comparisons can be made, however, only for lower-class schools because the requisite data for middle-class schools is missing. The results are fascinating, and also puzzling.

When the cultural emphasis of the schools is Black, the hypothesis is not supported. But when the cultural emphasis of the school is White, the hypothesis is reversed, that is, racial mixing appears to retard cognitive development. This outcome is even more striking when the data are unaggregated and the separate schools examined. This can be done by reference to Table III-17. There we see that both the two low-income, White cultural emphasis schools which are racially homogeneous show more change than their heterogeneous counterpart. This is so for both the turnover data and the cohort data. Thus, the results of Table III-19 are not the consequence of a lucky aggregation of numbers. Nor are they due to an outstandingly superior performance on the part of one school.

Although the results in Table III-19 cannot be absolutely accepted without further probing, they do lead to interesting speculations. It may well be that a White cultural emphasis is so entwined with middle-class values and experiences that lower-class pupils, both Black and White, face difficulties in making connections between the world of the school and the world of the home and community. The failure to make such connections will retard cognitive development. The only way schools can promote cognitive development in such a cultural context is to gear their teaching to the specific backgrounds of their pupils. Such a selective focus can be successfully applied when schools are racially homogeneous, but it is much more difficult to accomplish when the schools are racially mixed.

This interpretation is highly speculative. The finding itself must be verified by other studies before the speculation is worth probing. But the finding does raise interesting questions, and has certain implications which we shall address in the final section of this report.

So far, we have confined our attention to cognitive development and the Boehm Test of Basic Concepts. We now turn to our hypotheses dealing with self-esteem, for which we have had to work with admittedly weak data.

Self-Esteem

Originally, two hypotheses concerning self-esteem were derived. These hypotheses were:

1) A school whose cultural assumptions match the cultural heritage of its pupils enhances the self-esteem of those pupils.

2) A school whose cultural assumptions do not match the cultural heritage of its pupils is less damaging to the self-esteem of Black pupils than to that of White pupils.

A preliminary examination of the available Scamin data, however, showed very little difference among the schools in self-concept. This lack of difference is shown in Table III-20. The first column of numbers shows the mean self-concept scores for each of the schools. These means vary a maximum of 5.3 points. In order to test the differences among these means, a t-test was performed for each pair of means. The t-test is shown in the chart to the right of each mean. None of the differences between means is statistically significant.

This outcome is consistent with the previously reported poor quality of the Scamin data. The less reliable and valid a given set of data, the less likely are these data to reveal differences among the population tested. The t-test shown in Table III-20 indicates that the differences between schools in Scamin scores are probably due to chance, a result that supports our previous assessment of the low reliability and validity of these data.

Due to the lack of differences among schools in Scamin scores, it is clear that our first hypothesis about self-esteem could not be supported. The second hypothesis, however, points to differences in self-esteem between particular kinds of pupils in particular kinds of schools. This hypothesis can hold even if no differences in self-esteem can be found among the populations of entire schools.

Accordingly, a direct test was made of our second self-esteem hypothesis: the self-esteem of Black pupils in racially mixed schools with a White cultural emphasis will exceed that of White pupils in racially mixed schools with a Black cultural emphasis. The two relevant schools for which we have data differ in class composition as well as cultural emphasis, hence a confounding variable may be present in the results which are presented in Table III-21. A Mann-Whitney test was applied to these data, and the result was not statistically significant at the .05 level. The second hypothesis was, therefore, not confirmed.

Neither of the hypotheses about the impact of school climate upon self-esteem were supported by the data we collected. It must be remembered, however, that these data were deficient in both quality and quantity. The hypotheses still await testing with adequate instruments. In the next chapter, we shall examine the results of an effort to raise the self-esteem of Black pupils in schools with a Black cultural emphasis. Here, a far more adequate measure of self-esteem is used.

Table III-20

Mean Scamin Self-Concept Scores

School Type[a]	Mean Score	t-values for Each Pair[a]		
		Middle Mixed Black	Low Mixed White	Middle Black White
Middle-Mixed-Black	29.9			
Low-Mixed-White	27.4	0.37		
Middle-Black-White	25.5	0.50	0.21	
Low-Black-White	24.6	0.66	0.34	0.09

No significant differences

a. The labels represent social class, racial composition, and cultural emphasis, respectively.

Table III-21

Self-Concept Scores of Black Pupils in a School With a White Cultural Emphasis and White Pupils In a School With a Black Cultural Emphasis

Black and Puerto Rican Pupils in a School With a White Cultural Emphasis		White Pupils in a School With a Black Cultural Emphasis	
Score	Rank	Score	Rank
30	11.5	34	2
35	1	22	17.5
31	9	32	5.5
32	5.5	31	9
28	13	32	5.5
33	3	31	9
24	15.5	22	17.5
24	15.5		
30	11.5		
25	14		
32	5.5		
19	19		
Sum of the Ranks	124		66
N	12		7
Average Rank	10.33		9.43

Mann-Whitney test:

$U = 38$

$p > .05$

IV. SELF-CONCEPT TRAINING COMPONENT

Introduction

In addition to researching the effects of socio-economic status and racism on children in regular pre-school programs, a Self-Concept Training Component was introduced in 1974 and 1975 in three of the schools where the research was being conducted.

The essential focus of this training component was to test training approaches, techniques, and materials for their effectiveness in building self-esteem among Black children who participate in pre-school programs.

This component sought, too, to train parents, teachers, social workers, and other staff in techniques to develop self-esteem in children.

Background

It has long been maintained by psychologists and educators that the feelings children develop about themselves are formed primarily during the pre-school years. The writings of Mead (1956), La Benne and Greene (1969), and Felker (1974) suggest that self-concept is determined by childrens' perception of early social experiences. These theorists view the interaction between children and "significant others" as being crucial to the process of self-esteem building.

Parents and teachers are clearly the most important "significant others" for children and, as such, must be cognizant of the vital role they play in shaping a child's concept of self. Since a number of empirical studies have shown that problems in developing a healthy self-image are felt in a special way by young, Black, urban children, it is particularly important for the parents and teachers of this group to recognize the nature and extent of their influence on such youngsters. Foremost among these studies is the research of Kenneth and Mamie Clark (1950). The majority of urban pre-school Black children in this study, when given an opportunity to make a choice between Black and White dolls, chose White dolls, the inference being that these children had difficulty accepting their Blackness. Pettigrew (1964) conducted a study similar to that of Clark and Clark. Pettigrew also found that urban Black children frequently chose White dolls when presented with the opportunity to choose from a group of dolls representing different racial groups.

The studies cited above point to the need for beginning the process of helping urban Black children develop positive self-concepts during the highly impressionable formative years. The pre-school classroom, an environment in which young urban children spend six to eight hours a day, presents the teacher with the opportunity to become a very "significant other" and to offer learning experiences that will help each child feel that he or she is a successful and valued person. Research by Georgeoff

(1967) and Roth (1969) demonstrated that the self-esteem of somewhat older Black children could be improved through exposure to self-awareness curriculum experiences. It was our hope that the final evaluation of our Self-Concept Training Component would corroborate these findings for a younger age group and, therefore, help generalize the importance of relevant curriculum experiences for children of all ages.

Problem

The major focus of the self-concept training component was to help young Black children develop a positive sense of self. Teachers, parents, social workers, and other day care personnel were trained in techniques that can be used to develop self-esteem in children. More specifically, the self-concept training program (treatment) involved:

1. Systematic use of positive reinforcement by teachers (weekly conferences accenting successes, identification of strengths, and mutual goal setting).

2. Systematic parental attention and positive reinforcement of child's work (Parent/Child Homework Form).

3. Systematic dissemination of information about self to the child on a daily basis (10- to 20-minute small group informational and activity sessions each morning).

We set forth the following hypotheses:

1. Self-perception mean scores of pre-school children exposed to the intervention program will be higher than the self-perception mean scores of those who were not exposed.

2. Self-perception mean scores of female pre-schoolers exposed to the treatment will be higher than the self-perception mean scores of male pre-schoolers who were exposed.

3. Perceived teacher-perception (child's view) mean scores will be higher for pre-school children exposed to the intervention program than the perceived teacher-perception mean scores of those who were not exposed.

4. Perceived teacher-perception (child's view) mean scores of female pre-schoolers exposed to the treatment will be higher than the perceived teacher-perception mean scores of male pre-schoolers who were exposed.

These hypotheses were analyzed to determine the effect of the treatment on the self-concepts of the pre-school children.

The Testing Instruments

The research design used in the 1974 study was the Post-Test Only Control Group Design. This design utilizes a post-test with randomly equivalent experimental and control group samples. The instrument employed in the assessment of self-concept changes was the Brown - IDS Self-Concept Referent Test. The Brown IDS is an individually-administered test composed of eleven bipolar adjectival items written in the vocabulary of young pre-school children (e.g., nice-bad; happy - sad). Administration of the test requires that Polaroid photographs be taken of all subjects. When the tester is certain that the subject recognizes his or her picture, the subject is asked to respond to the eleven bipolar adjectival items first in terms of the subject's own perception of self and second in terms of the subject's perceived teacher perception of him or her.

Items are presented on the test in an "either-or" format, with a numerical value of "1" given to positive or socially desirable choices. Total scores for each subject across all scales were computed. Scores could range from 0 to 11 points. Significant difference in the group means was tested by a two factor analysis of variance. The level of rejection for the hypotheses was established at alpha = .05.

Procedure for 1974

Before subjects were exposed to the treatment, experimental group teachers were involved in several pre-program workshops.

The first workshop was designed to help teachers see the importance of meeting the affective needs of young children -- by first looking at their own affective needs. Once committed to the intervention program and its goals, teachers participated in other workshops where they were helped to become familiar with the techniques of the program by role playing. That is, they taught the program to each other by alternating the roles of teacher and student.

After the initial orientation and training sessions, the intervention program commenced with the full cooperation of teachers and parents. Classes within the day care center were randomly assigned to experimental and control groups. Subjects in the 1974 experimental group were exposed to the treatment for approximately five months. Throughout this period, teachers were expected to hold weekly conferences with each child. During these conferences, the child's accomplishments were highlighted and mutually agreed-upon goals were set for each child. In addition to the teacher/child conferences, self-awareness sessions were held every morning for about twenty minutes. These sessions were designed to provide children with positive

information about themselves, their families, and important school and community people.

Parents were expected to reinforce teachers' classroom efforts by spending a few minutes each week having discussions with their child about the goal that he or she was working on and about in-school success activity. All of the treatment learning experiences concentrated on helping the child establish a success-oriented pattern of learning. Thirty-six of the children assigned to the experimental group and sixteen of the children assigned to the control group were selected to be tested in 1974.

Findings

Table IV-1 and Table IV-2 present means, standard deviations, and two-way analysis variance results which tested the first hypothesis. Table IV-1 shows that the experimental group mean for pre-schoolers on the self-perception measure was higher than the control group mean. Table IV-2 presents an analysis variance F value of 30.5268. Significance at the .05 level was 4.08. The first hypothesis was strongly substantiated and therefore accepted.

Table IV-1 and Table IV-2 also present means, standard deviations, and analysis of variance results which tested the second hypothesis. Table IV-1 shows that the group mean for female pre-schoolers exposed to the treatment was lower than the group mean for male pre-schoolers who received the treatment. Table IV-2 presents an analysis of variance F value of 1.3621 which shows that this difference was not statistically significant at the .05 level. As a result, the second hypothesis was not accepted.

Table IV-1 also reveals that the difference between the control and experimental groups was caused mainly by changes in the self-perceptions of male pre-schoolers or, to state it another way, the control group male self-perception scores were much lower than the control group female self-perception scores. In Table IV-2 the F value for this interaction of 5.4720 was significant at the .05 level.

Data with respect to the third hypothesis are presented in Tables IV-3 and IV-4. Table IV-3 reveals that the experimental group mean for pre-schoolers on the perceived teacher-perception measure was higher than the control group mean on the same measure. Table IV-4 gives the results of the analysis of variance test conducted on the mean scores of the control and experimental groups. The F value of 15.5414 with 51 degrees of freedom was significant at the .05 level.

Also presented in Table IV-3 and Table IV-4 are means, standard deviations, and analysis of variance results for the fourth hypothesis. Table IV-3 shows that the mean scores for female pre-schoolers who received the treatment were slightly lower than the mean scores for males who were exposed to the treatment. The F value of 2.8776 presented in Table IV-4 shows that the difference was not statistically significant at the .05 level.

Table IV-1. Means and Standard Deviations for Male, Female, Control and Experimental Groups on the Self-Perception Measure, 1974

GROUPS	MALE		FEMALE		TOTAL	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
EXPERIMENTAL	9.90	1.00	9.73	1.16	9.83	1.06
	N=21		N=15		N=36	
CONTROL	6.44	2.60	8.42	1.72	7.31	2.41
	N= 9		N= 7		N=16	
TOTAL	8.87	2.27	9.32	1.46	9.06	1.97
	N=30		N=22		N=52	

Table IV-2. Two-Way Analysis of Variance for Self-Perception, 1974

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	70.3894	30.5268
BETWEEN SEXES	1	3.1407	1.3621
INTERACTION	1	12.6170	5.4720
WITHIN CELLS	48	2.3050	
TOTAL	51		

Table IV-3. Means and Standard Deviations for Male, Female, Control and Experimental Groups on the Perceived Teacher-Perception Measure, 1974

GROUPS	MALE		FEMALE		TOTAL	
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.
EXPERIMENTAL	9.48	1.12	9.47	1.13	9.47	1.11
	N=21		N=15		N=36	
CONTROL	6.67	2.50	9.00	1.63	7.69	2.41
	N= 9		N= 7		N=16	
TOTAL	8.63	2.08	9.32	1.29	8.92	1.50
	N=30		N=22		N=52	

Table IV-4. Two-Way Analysis of Variance Perceived Teacher-Perception, 1974

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	35.2826	15.5414
BETWEEN SEXES	1	6.5329	2.8776
INTERACTION	1	14.9054	6.5656
WITHIN CELLS	48	2.2702	
TOTAL	51		

DISCUSSION OF FINDINGS

With respect to the first hypothesis, it is clear that the intervention program did have a significant impact on the self-perception of pre-schoolers who were exposed to the program.

In hypothesis two, the researcher had predicted that the treatment would have a greater influence on the self-concept mean scores of female pre-schoolers than it would on the self-concept mean scores of male pre-schoolers. It is clear from examining the data that the treatment had more of an impact on males than it did on females. This finding suggests that perhaps the females entered the program with more positive self-concepts than those of the males. This finding was not expected.

With respect to the third hypothesis, the findings revealed that pre-schoolers exposed to the program perceived their teachers as having higher perceptions of them than did those pre-schoolers who had no exposure to the program. Again, it is important to note that, like self-perception, highly perceived teacher perception was found to have occurred most among the males. As a result, hypothesis four which maintained that the treatment would cause the perceived teacher-perception mean scores of female pre-schoolers to be higher than those of male pre-schoolers could not be accepted.

While there are obvious limitations in attempting to generalize about the results of this pilot study in other settings, one can strongly infer from the findings that treatment did have a positive impact on self-esteem. To discover which of the program variables made the difference, the study could be replicated several times using only one variable each time the study is run. The fact that a small number of children was involved in the study contributed to the difficulty in interpreting the findings. Despite these reservations, it was felt that the curriculum experiences used in this study were of value and perhaps can be put to use in other pre-school organizations.

Procedure for 1975

The procedure for 1975 was the same in almost all respects as that followed in 1974. The differences were as follows: 1) The research design used in 1974 was the Post-Test Only Control Group Design. In 1975, it was the Pre-Test Post-Test Control Group Design. 2) In 1974, 36 of the children assigned to the experimental group and 16 of the children assigned to the control group were selected to be tested. In 1975, the experimental group was composed of two self-contained classes with a combined total of approximately 28 children. One self-contained class of 14 students was selected as the control group. 3) In 1974, subjects in the experimental group were exposed to the treatment for approximately five months. In 1975, the period of exposure was two months.

Findings

Table IV-5, Table IV-6, and Table IV-7 present means, standard deviations, and two-way analysis of variance results which tested the first hypothesis.

An examination of Table IV-5 shows that the experimental group means on the self-perception measure were only slightly higher than the control group means. In Table IV-6 and Table IV-7, analysis of variance was conducted on the pre-test and post-test mean scores of the control and experimental groups. For the self-perception measure, neither the pretest F value of .6577 nor the post test F value of 1.8851 was significant at the .05 level. However, the table reveals that such differences as exist were in the direction which was expected. The first hypothesis was not accepted.

Table IV-5, Table IV-6, and Table IV-7 also present means, standard deviations, and analysis of variance results which tested the second hypothesis. The findings presented in Table IV-5 show that there was virtually no difference between the experimental group means for males and females. Table IV-6 and Table IV-7 present an analysis of variance pretest F value of .5392 and a post test F value of .5075 which indicate that differences were not statistically significant at the .05 level. As a result, the second hypothesis was not accepted.

Data with respect to the third hypothesis is shown in Table IV-8, Table IV-9, and Table IV-10. An examination of Table IV-8 reveals that the experimental group mean for pre-schoolers on the perceived teacher-perception measure was somewhat higher than the control group mean on the same measure. Table IV-9 and Table IV-10 show the results of the analysis of variance test conducted on the pre-test and post-test mean scores. The pre-test of F value of .0918 with 2 degrees of freedom was not significant at the .05 level. On the other hand, the post-test F value of 4.6712 was significant. Since significance at the .05 level is 4.08, the third hypothesis was substantiated and therefore accepted.

Also presented in Table IV-8, Table IV-9, and Table IV-10 are means, standard deviations, and analysis of variance results for the fourth hypothesis. Table IV-8 shows that the mean scores for female pre-school children who received the treatment were slightly higher than the mean scores for males who were exposed to the treatment. The pre-test F value of .3922 and the post-test F value of .2094 presented in Table IV-9 and Table IV-10, respectively, were not statistically significant at the .05 level.

Table IV-5. Means and Standard Deviations for Male, Female, Control and Experimental Groups on the Self-Perception Measure, 1975

	PRE				POST				TOTAL	
GROUPS	MALE		FEMALE		MALE		FEMALE		Pre	Post
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEANS	
EXPERIMENTAL	8.40	.52	8.31	1.11	8.80	1.23	9.15	.80	8.35	9.00
	N = 10		N = 13		N = 10		N = 13		N = 23	
CONTROL	7.67	.82	8.50	1.05	8.33	1.97	8.50	.84	8.08	8.42
	N = 6		N = 6		N = 6		N = 6		N = 12	

Table IV-6. Two Way Analysis of Variance for Pretest Self-Perception, 1975

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	.5517	.6577
BETWEEN SEXES	1	.4523	.5392
TOTAL	2		

Table IV-7. Two Way Analysis of Variance for Post Test Self-Perception, 1975

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	2.6833	1.8851
BETWEEN SEXES	1	.7224	.5075
TOTAL	2		

Table IV-8. Means and Standard Deviations for Male, Female, Control and Experimental Groups on the Perceived Teacher-Perception Measure, 1975

	PRE				POST				TOTAL	
GROUPS	MALE		FEMALE		MALE		FEMALE		PRE	POST
	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEAN	S.D.	MEANS	
EXPERIMENTAL	8.10	.57	8.38	.87	9.30	1.16	9.46	.78	8.26	9.39
	N = 10		N = 13		N = 10		N = 13		N = 23	
CONTROL	8.17	.98	8.17	1.17	8.50	1.52	8.67	.82	8.17	8.58
	N = 6		N = 6		N = 6		N = 6		N = 12	

Table IV-9. Two Way Analysis of Variance for Pretest Perceived Teacher-Perception, 1975

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	.0700	.0918
BETWEEN SEXES	1	.2991	.3922
TOTAL	2		

Table IV-10. Two Way Analysis of Variance for Post Test Perceived Teacher-Perception, 1975

SOURCES OF VARIATION	d.f.	MEAN SQUARE	F
BETWEEN GROUPS	1	5.1479	4.6712
BETWEEN SEXES	1	.2308	.2094
TOTAL	2		

DISCUSSION OF FINDINGS

With respect to the first hypothesis, it is clear that the intervention program did not have a significant impact on the self-perception of the children who were exposed to the program. It is equally clear from examining the data that there was virtually no discernible difference between the self-concept scores of males and females. It is important to note that with respect to hypotheses one and two the differences that did exist, while not significant, were in the direction hypothesized. Exposing the subjects to the treatment for a longer period of time might have yielded significant differences. It should also be pointed out that the pre-test scores for all subjects were quite high, suggesting that most of the subjects entered the program with moderately positive self-concepts.

With respect to the third hypothesis, the findings revealed that pre-schoolers exposed to the program perceived their teachers as having slightly higher perceptions of them than did those pre-schoolers who had no exposure to the program. This difference was just barely statistically significant, suggesting that the treatment did have some impact. The data did not show any appreciable difference between the scores of females and males on the perceived teacher-perception measure. As a result, hypothesis four which maintained that the perceived teacher-perception scores of females would be higher than the scores of males could not be accepted.

Despite the many difficulties encountered throughout the year, we felt that the training component of this project provided a valuable service to the children, teachers, and parents who participated. The overall results suggest that the self-concept development approach used in this pilot program is of value and can be utilized in other day care institutions. Finally, we would like to note that we feel the training helped teachers to understand the importance of building and strengthening each child's self-concept, and working toward that end on a conscious, continuing, day-to-day basis.

* * * * *

V. SUMMARY AND DISCUSSION

Summary of Findings

1) Several schools, notably those low-income schools with a predominantly Black pupil population and a Black cultural emphasis, were found to have above average conceptual knowledge at the beginning of school compared to the normative data for low-income schools.

2) The social class composition of a school is related to conceptual knowledge at both the beginning and end of the school year.

3) A low pupil-teacher ratio is related to high conceptual knowledge at the beginning of the school year, but not at its end.

4) Staff training is positively related to conceptual knowledge at the end of the school year but not at the beginning.

5) Significant conceptual development was found for four schools, and little development for four other schools. But there was no overall pattern involving social class, racial composition, or cultural emphasis between these two groups of schools.

6) Among schools with a White cultural emphasis, social class was related to growth in conceptual knowledge. But this was not the case among schools with a Black cultural emphasis.

7) Among schools with a White cultural emphasis, racial homogeneity within the classroom enhanced growth in conceptual knowledge. This was not the case among schools with a Black cultural emphasis.

8) No differences in self-image among the various types of schools could be found; nor was there any difference between Black and White students, in terms of self-image, in their response to cultural climates different from their own.

9) When teachers systematically praise pupils in order to raise the pupils' self-esteem, the pupils quickly perceive that their teachers think well of them.

10) If the systematic praise is extended over several months, there is evidence that the pupils' perception of themselves is enhanced.

Discussion

Some of our findings were somewhat predictable while others were surprising. Some findings supported our hypotheses; others did not. In this, the final portion of our report, we shall comment upon those aspects of our study that seem to have particular significance for pre-school programs and for education in general. One study cannot, by itself, produce incontrovertible evidence for or against a point of view. This is particularly so when, as was true in this study, the

available data are insufficient for a full and detailed exploration of the subject. Our commentary, therefore, carries with it a request for further research along the lines that have been opened in this study.

One standard finding from this study was the relationship between social class and conceptual knowledge. The higher the social class composition of a school, the greater the mastery of concepts, both at the beginning and end of school, on the part of the pupils in that school. We discovered, however, that this superiority of middle-class pupils existed in those schools with a White cultural emphasis. There were no class differences in pupils' understanding of basic concepts in schools with a Black cultural emphasis.

We do not know why this is so. But for a long time educators and critics of educational methodology have been pointing out that the style and content of most schools caters to the cultural outlook of the White middle-class. Indeed, this awareness was the major impetus behind the drive to create schools whose teaching was not oriented towards this group. On the basis of the evidence that could be amassed in this study, some of the schools which have made the attempt to break away from a White educational framework are at least beginning to succeed in their efforts.

Another finding in the study, however, stands as a warning against complacency concerning the successful achievements of schools with a Black cultural emphasis. We discovered that low-income, predominantly Black schools with a Black cultural emphasis exceeded the norm for conceptual knowledge among low-income pupils at the beginning of the school year. They did not, however, exceed this norm at the end of the school year. We suspect that the superiority of the Black cultural emphasis schools at the beginning of the year reflects educational interest and selectivity on the part of the parents of the pupils in those schools. Parents who are alert to some of the aforementioned cultural biases that exist in most educational settings are likely to seek out a different educational experience for their children. These are also the parents who, by virtue of their interest in their children's education, are likely to have devoted some time at home to acquainting their children with certain basic concepts. Hence, their children perform better in school initially. The tragedy is that the schools which these parents have selected cannot, it seems, enable their students to maintain, during the school year, the advantage they have brought with them. This, too, is a matter that deserves further thought, study, and experimentation.

Most intriguing among our findings was the reversal in the impact of racial composition upon cognitive development between schools with a Black cultural emphasis and those with a White one. This finding strongly suggests that the effects of racial mixing in the classroom cannot be assessed independent of the context within which the mixing occurs. When racial mixing occurs in standard White cultural emphasis schools, the consequences seem to be negative for cognitive development. But when racial mixing occurs under different conditions (in this study, schools with a Black cultural emphasis) negative consequences do not occur. It may well be that the racism that seems to be endemic to the typical school has negative consequences for cognitive development.

Our self-concept training component revealed that through the use of specific teaching techniques and treatment approaches, pre-school teachers can enhance the self-esteem of their pupils. This was very clearly shown in the 1974 data where the post-test scores of the experimental group were significantly higher than those of the control for both self-perception and view of teachers' perception of them. Expected differences between boys and girls, however, were not found.

In 1975, the results differed from those of 1974 only in that the difference in self-perception between experimentals and controls was not large enough to attain statistical significance at the .05 level. This may be directly attributable to the shorter exposure of the pupils to the treatment (two months compared to five months). This leads to the speculation that raising pupils' self-esteem (at least through the method tested in this study) takes place through a process requiring a time span long enough to permit a two-phase response -- a process in which the teacher's highlighting of a child's accomplishments induces the pupil, first, to perceive that the teacher thinks well of him or her, and, on the basis of this perception, to then begin to think well of him- or herself.

That fact that teachers can, in the course of normal school events, help build a child's self-esteem cannot be overemphasized. Much of the failure of Black pupils has been attributed to low self-image induced by neighborhood and family circumstances as well as school factors. The impact of the findings from the training program is that teachers can, through relatively simple, but systematic, classroom procedures, counterbalance those forces which tend to lower a child's self-esteem.

APPENDIX A

Verification of Classification

Basic to our study is a classification of schools along three dimensions: social class, racial composition, and cultural emphasis within the classroom. The initial classification of schools in these categories was based upon the judgment of a knowledgeable individual in the Boston community. Some verifications of the classification of the schools, therefore, is necessary.

Social Class

Originally, we had intended to certify the middle-class or lower-class composition of a school by reference to the proportion of pupils who were eligible for free school lunches. We discovered, however, that several of the schools had elected not to participate in the free lunch program and supplied lunches to their pupils through other means.

A second method of verifying the socio-economic class of students in a school was by reference to the geographical area it served. This method assumes that virtually all of the pupils attending a school come from the surrounding neighborhood. Thus, by determining the socio-economic level of the community surrounding each school through census data, it is possible to broadly classify the socio-economic backgrounds of the pupils within that school. Although this method generally confirmed our initial classification, and was one of the criteria used by our knowledgeable informant, there were several schools in our sample that did not serve the surrounding community. Pupils were brought into the school from a considerable distance. Thus, this method of verifying the social class composition of our schools had to be abandoned also.

We were left with the alternative of verifying our classification by seeking the judgments of others, especially the program and education directors of the participating schools. Corroborative evidence was sought by our testers, and/or the directors were asked the basis for their judgment about the class backgrounds of their pupils. In all instances, the evidence and judgments that were obtained confirmed our original classification of the schools. Although the confirmatory evidence is not systematic, the information we have collected leaves no doubt in our minds that each school is properly

classified according to level of Socio Economic Status (SES).

Racial Composition

The schools were classified as predominately Black, predominately White, and mixed. Verification as to whether the pupil composition of the schools conformed to this classification was easily obtained since the ethnicity of each pupil tested was collected. The data are shown in Table A-1. Of the four schools classified as Black, all had pupil populations that were at least seventy-nine percent Black. Correspondingly, of the two schools that were classified as predominately White, one contained all White pupils, and eighty-nine percent of the pupils in the other school were White. The schools that were classified as racially mixed tended toward Black and Puerto Rican predominance. Three of these six schools had racial compositions which were approximately ninety percent Black and Puerto Rican. The other three showed a much better racial balance - a 60-40 Black and Puerto Rican vs. White composition.

Mann-Whitney tests of significance were applied to the difference in racial composition among the schools. Three tests were applied: one for predominately Black schools, one for predominately White schools, and one for racially mixed schools. Statistically significant results (P less than .05 for each of the three tests) were obtained for all three tests. We may take this as verification of the original classification of the schools according to racial composition.

Cultural Emphasis

Originally five items from the Observation Form (see Appendix C) were selected to determine the cultural context within which pre-school education was conducted. These were: (1) the kind of dress worn by staff - item 12; (2) the inclusion of ethnically-oriented items in the materials purchased for the school - item 13; (3) the kinds of pictures displayed on the walls of the school - item 3; (4) the ethnic composition of the staff - item 14; and (5) the kinds of holidays and celebrations observed by the school - item 16. Only the last three items, however, showed sufficient variability to warrant use as a measure of the cultural context of the school.

The differences in staff dress noted were confined to variations among those who wore dresses, slacks, or dungarees. The wearing of dashikis or distinctively African dress was not noticed by the observers in any of the schools.

Table A-1

Racial Composition of the Schools

Predominately Black Schools	% Black	% Puerto Rican	% White	No. of Pupils
Low-Black-Black: A	90	0	10	21
Low-Black-Black: B	60	40	0	85
Low-Black-White	79	21	0	47
Middle-Black-White	92	0	8	26
Racially Mixed Schools				
Low-Mixed-Black: A	56	33	11	9
Low-Mixed-Black: B	86	7	7	15
Low-Mixed-Black: C	90	0	10	21
Middle-Mixed-Black	35	26	39	23
Low-Mixed-White	24	38	38	21
Middle-Mixed-White	54	0	46	114
Predominately White Schools				
Low-White-White	11	0	89	28
Middle-White-White	0	0	100	7

Very few of the schools had ethnically-oriented educational materials. An observer noted that one school had the Swahili numbering system; and two others had ethnically-oriented reading material.

We thus have three separate indicators of the cultural emphasis of each school. These measures are: (1) the racial composition of the staff; (2) the presence of pictures of Blacks on the walls; and (3) the kinds of holidays celebrated by the school.

Racial Composition of Staff: Black staff are a means of racial identification for the pupils. Schools that are concerned about enhancing the self-image of Black pupils through providing ethnic role models will see to it that a large proportion of the staff is Black. The measure of the racial composition of staff that was used was simply the percentage of Black staff in the school.

This indicator of Black cultural emphasis is statistically related to the way schools were classified. The data are shown in Table A-2.

Each of the six schools identified as having a Black cultural emphasis had a staff that was at least seventy-five percent Black. Only one of the six schools identified as having a White cultural emphasis had that high a proportion of Black staff. In fact, two-thirds of the six schools with a White cultural emphasis had less than twenty-five percent Black staff, and three of these had no Black staff.

Pictures Displayed: A second indicator of Black cultural emphasis is the kinds of pictures displayed in a school. It was felt that the display of pictures of prominent Black Americans in a school could serve as a vehicle for making Black children aware of the heroes of their race. Using such pictures to enrich discussions of the achievements of Black Americans, and displaying them prominently within a school could provide a means of identification and inspiration for the pupils which should bolster their self-image. Schools with a Black cultural emphasis, therefore, should be schools which have Black Americans among the pictures that are displayed on the school walls. This proved not to be the case, however. Only two of the eleven schools for which we have data displayed pictures of prominent Black Americans, and both of these were schools that were identified as having a White cultural emphasis. These were the two schools which, although categorized as having a White cultural emphasis, had a predominately Black pupil composition. The conclusion we must draw is that the kinds of pictures displayed is a weak measure of the cultural emphasis of a school.

Holidays: The final indicator of cultural emphasis is the

Table A-2

Percentage of Black Staff Members According to Cultural Emphasis of the Schools

% Black Staff Members	Schools With a Black Cultural Emphasis	Schools with a White Cultural Emphasis
75 - 100%	6	1
50 - 74%	0	0
25 - 49%	0	1
0 - 24%	0	4
	6	6

holidays that are celebrated. A school will recognize and celebrate the birthdays, deaths, and events which are significant in the cultural history of the community with which it identifies. In order to measure this dimension of ethnic identification, schools were asked what holidays they recognized and how these holidays were celebrated. In all, some thirty-six different holidays were reported by the schools. Some of these, like Christmas, were celebrated by all of the schools; others, like Founders Day, were specific to a given school but were unrelated to racial identification.

The thirty-six holidays were reduced to twenty by eliminating those holidays which were celebrated by all schools, and, with the exception of the starred holidays below, those holidays which were celebrated by only one school. Ten of the twenty holidays were unique to Black culture. The remaining ten reflected other patriotic, religious, and ethnic holidays. The twenty holidays are shown in the list below.

Black Culture	Other
Afro-American History Week	Columbus Day
Crispus Attucks Day	George Washington's Birthday
Emancipation Proclamation Day	Veterans Day
Martin Luther King's Birthday	Bunker Hill Day
Moslem New Year's Day*	Evacuation Day
Malcolm X Day	Hanukkah
Kwanza	Good Friday
W.E.B. DuBois Day	de Diego's Birthday
Frederick Douglas' Birthday*	Halloween
Black Solidarity Day*	Thanksgiving

Schools were then given a Black Holiday score. This score was the percentage of Black holidays celebrated by a school from this list of twenty holidays. Thus, a school which celebrated only Black holidays received a score of 100, while a school which celebrated none of these holidays received a score of zero. This measure, however, does not statistically distinguish between schools that have been classified as having a Black or White cultural emphasis, although there is a close relationship as Table A-3 shows. The failure to achieve statistical significance below the .05 level is again due to the two schools which, although identified as having a White cultural emphasis, have a predominately Black student population.

Our results only partially verify our classification of schools according to their cultural emphasis. Admittedly, the

Table A-3

School Holiday Scores According to

Cultural Emphasis of the Schools

Holiday Score:	Cultural Emphasis: Black	White
75 - 100	1	0
50 - 74	1	2
25 - 49	4	1
0 - 24	0	3
	6	6

cultural emphasis of a school is hard to define and operationalize. The critical test of cultural emphasis is how that emphasis infuses the curriculum and general atmosphere of the school. These dimensions could only have been assessed if we had been able (which we were not) to spend a great deal of time observing the teaching and interaction within each school. Inasmuch as the strongest measure of cultural emphasis (i.e. racial composition of staff) showed a positive relationship to our classification, and the next strongest measure -- school holidays -- almost attained statistical significance, we continued to utilize our classification of schools according to their originally assigned cultural emphasis. We were mindful, however, of the rough nature of the classification.

APPENDIX B

Validity of the Boehm and Scamin Tests

During our feedback sessions with the schools we gained some general impressions of the validity of these two instruments. These impressions are crucial for a correct interpretation of the results of our study.

The reactions to the Boehm were, in general, positive. All of the schools were working on the concepts that were tested by the Boehm. Thus, the test was very real to the staff of these schools. There were a few minor criticisms of the way some of the pictures were drawn in the Boehm (e.g. the pear). It was felt that the pictures could have been more true to life. Another criticism dealt with the way the questions were asked. Some teachers, and even some testers, felt that the vocabulary was more complicated than that to which the children were accustomed. These criticisms, however, were minor compared to the general understanding and acceptance of the test. It was felt that the concepts were important for the children to understand, and that the test reflected a fair way of determining each child's level of knowledge.

Reaction to the Scamin self-image test was quite different. Our testers reported that many pupils had difficulty understanding and following the directions. Many teachers felt that the test did not give a true picture of the self-image of their pupils. Some of the testers took the time to ask children why they responded the way they did. They discovered that the interpretation implicit in the test often was not what the pupil had in mind. For example, children were asked to indicate, by marking an appropriate face, whether they would feel "happy," "sad," or "neither happy nor sad" if they found themselves in one of twenty-four situations. Among the situations were: having to tell a parent that a coat was lost, and finding out about next year's class. One youngster reported that he would be sad to find out about next year's class because he liked this year's class and didn't want to leave it. The scoring of this item in the Scamin, however, assumes that a "sad" reaction reflects a child's belief that his/her performance in the current year's class was not at a sufficiently high level to make the news about next year's class good news. In the second example, the child said he would be happy if he had to tell his parents that he lost his coat because then they would buy him a new one.

Other criticisms of the Scamin were that the test sheet itself was too cluttered and confusing for the children to follow. The child taking the test, we discovered, often responded to the pictures on the answer sheet more than the questions. The reason why children chose particular pictures was difficult to ascertain -- each child seemed to have his or her own agenda as to how to choose the faces. This agenda sometimes did and sometimes did not correspond to the idea of self-image as operationally defined by the test. Some listened carefully and responded carefully, others seemed to listen but then responded either indiscriminately or in a pattern (e.g. choosing all of the smiling faces, or marking diagonally across the page). The grammatical structure of the questions seemed to foster inattention in that the "correct" answer called for the indication of "happiness" on three of the four scales. Thus, a very high or very low self-image score could reflect response-set (i.e. the tendency to respond the same way regardless of the question asked) as well as reflecting self-image.

Finally, the faces presented ambiguous images to some of the children. They could not decide which emotion each face was meant to represent. To some of the children the neutral face was the happy face, to others it was the sad face. For other pupils, the definition of "sad," "happy," and "neutral" faces changed with the questions. Many of the children had difficulty with the concept of neutral.

Several of the schools which studied the Scamin prior to our initial collection of data would not grant permission for its use. They felt, and our subsequent experience has largely confirmed, that it could not give a true picture of the self-image of their pupils.

APPENDIX C

BLACK ANALYSIS, INC.

BOSTON PROJECT

SCHOOL OBSERVATION QUESTIONNAIRE

Although most of the information requested in this questionnaire can be obtained through observation, some items (notably 7, 10, 13, 14, 15, and 16) will have to be completed by interviewing the head teacher or director.

1. Does the School have the following facilities and equipment?

indoor play area	Yes_____	No_____
outdoor play area	Yes_____	No_____
an area for quiet activities	Yes_____	No_____
cubbys or lockers for personal belongings	Yes_____	No_____
children-sized tables	Yes_____	No_____
children-sized chairs	Yes_____	No_____
cots for naps	Yes_____	No_____
toys and playthings	Yes_____	No_____
books and other materials for children	Yes_____	No_____

2. Is the lighting in the classroom(s) adequate?

Yes, natural light_____

Yes, artificial light_____

No_____

3. Are there pictures on the walls of the school?

*If "yes," what kind? (check as many as apply)

work done by the children_____

commercial artwork_____

pictures of famous people_____*

Who?_____

_____

_____

commercial prints of city scenes___

commercial prints of pastoral scenes___

commerical prints of animals___

4. Does the classroom seem overcrowded?

Yes_____ No____

5. Does there seem to be a high noise level in the classroom?

No____

yes, a lot of it because of fighting among the children____

yes, a lot of it because of the happy excitemnt of the children____

yes, because teachers are yelling at the children____

6. General comments about the appearance and atmosphere of the classroom?

7. How are activities for the children decided upon?

children select their own activity____

teacher schedules activities____

other (please explain)_____

_____

_____

_____

8. Does the teacher participate in the childrens' activities, or does she direct them?

participates_____

directs_____

seems uninvolved, except to maintain order____

seems uninvolved____

9. Do the teachers seem to know the children?

Yes____ No___

10. How many of the staff are between the following ages?

50 or older _____

40 - 49 _____

30 - 39 _____

20 - 29 _____

less than 20 _____

11. General comments about teachers and their interaction with pupils.

12. What is the general attire of the teachers? (check one)

African dresses & dashikis_____

slacks_____

dungarees_____

13. What books and materials are used by the children? (Please List)

_____

_____

_____

14. How many of the staff are: (enter a number for each)

Black men _____

Black women _____

White men _____

White women _____

15. How many of the staff have attained each of the following levels of training?

	Number with this training
Graduate School of Education	_____
Other Graduate School	_____
College graduation - education major	_____
College graduation - other major	_____
Some college - education major	_____
Some college - other major	_____
High school graduation	_____
Less than high school organization	_____

16. Which of the following holidays are observed by the school, and how?

	School Closed	Special Program	Not Observed
Afro-American History Week	_____	_____	_____
American Indian Day	_____	_____	_____
Christmas	_____	_____	_____
Columbus Day	_____	_____	_____
Crispus Attucks Day	_____	_____	_____
de Diego's Birthday	_____	_____	_____
Emancipation Proclamation Day	_____	_____	_____
George Washington's Birthday	_____	_____	_____
Halloween	_____	_____	_____
Hanukkah	_____	_____	_____

	School Closed	Special Program	Not Observed
de Hostos' Birthday	_____	_____	_____
Martin Luther King's Birthday	_____	_____	_____
Moslem New Year's Day	_____	_____	_____
Pan American Day	_____	_____	_____
Purim	_____	_____	_____
Rosh Hashanah	_____	_____	_____
St. Patrick's Day	_____	_____	_____
Yom Kippur	_____	_____	_____
Others (please list & check)			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

PLEASE USE THE BACK OF THESE PAGES FOR ANY OTHER COMMENTS AND OBSERVATIONS

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